THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

DAEL WOLFLE, *Editor*

VOLUME 11, 1947

Published Monthly by
THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 MASSACHUSETTS AVENUE, N.W.
WASHINGTON 5, D. C.

Bureau Edn. ... Research
... COLLEGE
... 6.8.70
... No. 9.10

CONTENTS OF VOLUME II

Women in American Psychology: Factors Affecting Their Professional Careers: Alice I. Bryan and Edwin G. Boring 3
Comment 21
Footnote to Military Psychology: Robert Tyson 21
Are Rat Psychologists Responsible for Fission? C. W. Crannell 22
Must Psychologists be Experimental Isolationists? Donald W. Fiske 23
Across the Secretary's Desk 24
Psychological Notes and News 29
Research on Personnel Selection in the Royal Navy and the British Army: P. E. Vernon 35
An Analysis of Duties Performed by Clinical Psychologists in the Army: Max L. Hutt and Emmette O. Milton 52
The Place of Experimental Psychology in the Undergraduate Curriculum: Anne Anastasi 57
A Comparison of ASTP Psychology Graduates with Other Groups in the AAF Classification School: Arthur O. England and Harry Laurent, Jr. 63
Naval Aviation Psychology. IV. The Central Research Groups: Donald W. Fiske 67
Professional Frustration in Government Psychologists: Wilton P. Chase 73
Across the Secretary's Desk 76
Psychological Notes and News 77
History of Psychological Studies of the Design and Operation of Equipment: William E. Kappauf 83
Psychology at the Naval Research Laboratory: Franklin V. Taylor 87
Psychological Research on Equipment Design in the AAF: Paul M. Fitts 93
Tests Used in Veterans Administration Advisement Units: Gertrude Baker and John Gray Peatman 99
The Calibration of Test Items: L. L. Thurstone 103
Comment 105
In Defense of Military Psychology: Harry J. Older 105
Notehand for Psychologists: W. S. Taylor 106
Across the Secretary's Desk 108
Psychological Notes and News 110
Fifty-Fifth Annual Meeting of the American Psychological Association 119
Call for Papers, Fifty-Fifth Annual Meeting of The American Psychological Association: The Convention Program Committee 120
An Analysis of Action on Science Legislation in the Last Congress: Robert W. Leeper 127
The Foreign Language Requirement for the Ph.D.: Charles Bird, William T. Heron, Paul E. Meehl, Donald G. Paterson 136
Psychology and Psychiatry: Karl Menninger 139
Validation of the General Clerical Abilities Test for Selection and Placement of War Department Civilian Personnel: Staff, Personnel Research Section, Personnel Research and Procedures Branch, Adjutant General's Office 141
Some Areas of Caution for the Psychology Student: Theodore Landsman and Manfred Frank de Martino 145
Comment 148
Practice in Personnel Psychology: Gerald Carter 148
A New Type of Elementary Course: F. K. Berrien 148
Across the Secretary's Desk 151
Psychological Notes and News 152
The Clinical Method in Science: Frederick C. Thorne 159
The Future of Research in Clinical Psychology and Psychiatry: David Rapaport 167
The Training of Clinical Psychologists: Charles A. Ullmann 173
The Conference on Genetics and Social Behavior at the Roscoe B. Jackson Memorial Laboratory: J. P. Scott 176
Comment 178
Reply to "Professional Frustration in Government Psychologists": Franklin V. Taylor 178
Psychologists' Opinions VS Their Sense of Evidence: Edwin G. Boring 178
More Effective Use of Machine Scored Examinations: Raymond C. Bice 179
Across the Secretary's Desk 180
Board of Directors 181
Psychological Notes and News 183
Annual Report of the Policy and Planning Board of the American Psychological Association: 1947 191
Clinical Training Facilities: 1947: Robert R. Sears 199

Picture of the Committee on Graduate and Professional Training 206
Comment 207
Opportunities for Negroes in Psychology: JAMES A. BAYTON 207
Counterpoint to a "Footnote to Military Psychology": IRVING C. WHITTEMORE 208
The Future of Psychology, or the Goose that Laid the Golden Eggs: SAMUEL W. FERNBERGER 209
Pavlov Letter 210
Twelfth International Congress of Psychology 211
Formation of a Committee for the Study of Animal Societies Under Natural Conditions: J. P. SCOTT 212
Across the Secretary's Desk 213
Psychological Notes and News 216
Society of Experimental Psychologists 223
Industrial Psychology as Management Technique and as Social Science: ARTHUR KORNHAUSER 224
Psychological Writing, Easy and Hard: S. S. STEVENS and GERALDINE STONE 230
Psychologists' Finances: HELEN WOLFLE 236
The New Harvard Psychological Laboratories: S. S. STEVENS and E. G. BORING 239
Comment 244
Recommendations to the National Commission for UNESCO 244
A Proposal for a Code of Ethics for Professional Psychologists 246
Across the Secretary's Desk 247
Psychological Notes and News 248
Program of the Fifty-Fifth Annual Meeting of the American Psychological Association 255
Carl R. Rogers 357
Some Observations on the Organization of Personality: CARL R. ROGERS 358
Psychological Boners: W. LESLIE BARNETTE, JR 369
Visitor to America: F. C. BARTLETT 372
Research Reports of the AAF Aviation Psychology Program: JOHN C. FLANAGAN 375
A Bibliography on Careers in Psychology: GEORGE J. DUDYCHA 376
A Laboratory Period in the First Course in Psychology: HAROLD SCHLOSBERG 384
Across the Secretary's Desk 388
Psychological Notes and News 389
Proceedings of the Thirty-Ninth Annual Meeting of the Southern Society for Philosophy and Psychology: JOSEPH WEITZ 397
Proceedings of the Twenty-Seventh Annual Meeting of the Western Psychological Association: LESTER F. BECK 404
Proceedings of the Nineteenth Annual Meeting of the Midwestern Psychological Association: CLAUDE E. BUXTON 419
Proceedings of the Eighteenth Annual Meeting of the Eastern Psychological Association: J. MCV. HUNT 429
The Sensible Organization of Courses in Psychology: DAEL WOLFLE 437
On Defining Psychology as a Profession: CLAIRETTE P. ARMSTRONG 446
Across the Secretary's Desk 449
Psychological Notes and News 451
The Problem of Psychotherapy: LAURANCE F. SHAFFER 459
Proceedings of the Fifty-Fifth Annual Business Meeting of the American Psychological Association, Inc., Detroit, Michigan: HELEN PEAK 468
APA Officers, Division Officers, Editors, Committees and Representatives, 1947–48 511
Annual Report of the Executive Secretary: 1947: DAEL WOLFLE 516
A Simple, Inexpensive Classroom Demonstration of Concept Formation: CHARLES N. COFER and GEORGE HORSLEY SMITH 521
Comment 523
The Flesch and the Spirit: SAUL ROSENZWEIG 523
Further Comment: S. S. STEVENS and GERALDINE STONE 524
Professor Taylor and the Problem of Notehand: F. L. WELLS 525
Must We Frighten Our Students? JOHN S. BLACK 527
Across the Secretary's Desk 529
Psychological Notes and News 531
Recommended Graduate Training Program in Clinical Psychology: COMMITTEE ON TRAINING IN CLINICAL PSYCHOLOGY 539
A Multiple Cubicle-Bench for the Student Laboratory in Psychology: CARL PFAFFMAN 559
Across the Secretary's Desk 561
Mrs. J. P. Symonds, portrait 562
Psychological Notes and News 563
Index to Volume II 566

739 A

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 — January, 1947 — Number 1

In this Issue

Women in American Psychology: Factors Affecting Their Professional Careers: ALICE I. BRYAN AND EDWIN G. BORING 3

Comment 21

Footnote to Military Psychology: ROBERT TYSON 21

Are Rat Psychologists Responsible for Fission? C. W. CRANNELL . 22

Must Psychologists be Experimental Isolationists? DONALD W. FISKE 23

Across the Secretary's Desk 24

Psychological Notes and News 29

Convention Calendar 32

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Dael Wolfle, *Editor*

Eugenia Norris, *Managing Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect

DONALD G. MARQUIS
University of Michigan
Ann Arbor

Recording Secretary

HELEN PEAK
Connecticut College
New London

Treasurer

WILLARD L. VALENTINE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Executive Secretary

DAEL WOLFLE
1515 Massachusetts Ave , N.W.
Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT
EDWARD C. TOLMAN
JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles, critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page; author receives royalties.

Single copies only, price varies according to size.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

WOMEN IN AMERICAN PSYCHOLOGY: FACTORS AFFECTING THEIR PROFESSIONAL CAREERS

ALICE I. BRYAN and EDWIN G. BORING

Columbia University *Harvard University*

Pi Lambda Theta, National Association for Women in Education, has for some years been actively engaged in the study of women's professional problems. In 1935 the Association sponsored a survey of the research already accomplished in this field, and since then has granted Awards to thirteen research studies, most of them in this field of investigation. Pi Lambda Theta takes pride in acknowledging *Women in American Psychology: Factors Affecting Their Professional Careers* as the recipient of a 1946 Award granted from the Ella Victoria Dobbs Fellowship Fund.

The following article is a condensation of the longer paper to which the Award was made. A further study of the relation of marriage to women's professional activities is planned by the authors.

PREVIOUS research (*1*, *2*) on the status women have achieved in contemporary American psychology has revealed these facts. Women constitute about 30 per cent of some 4,500 psychologists who qualify for membership in the American Psychological Association. About 47 per cent of these women hold the PhD degree, as compared with 63 per cent of their male colleagues. The women are more active than the men in practical professional work in schools, educational systems, clinics, guidance centers, hospitals, and custodial institutions, where they hold 60 per cent of the available psychological positions. Women as a group prefer the kinds of jobs which they actually have. The average woman in 1944 was receiving less money for her professional work than was the average man, but it was not clear whether the female salary decrement was due to a greater amount of part-time work, to a lower pay rate for personalistic services than for basic research, or to discrimination against female sex as such.

We have undertaken to press this investigation further by issuing a questionnaire to psychologists who hold the PhD degree, a questionnaire enquiring into various factors which we thought might affect their careers—their family backgounds, the history of their professional interests and of their training, their attitudes toward their work, the effects of sex, marriage, parenthood, and other nonprofessional relationships upon their careers. Although interested in women, we needed to question men as a control. Presently we found ourselves as much interested in the men as in the women.

Of particular importance is the knowledge of what women do with a PhD in psychology. Do they use it? Is the money spent on training them justified? Lowther and Downes (*4*) have recently reported that the present limitation of women to approximately 5 per cent of the total enrollment in American medical colleges is not justified in view of the record of professional activities of 1,240 women graduates from 1921 to 1940 of seven representative Eastern medical colleges. They showed that 90 per cent of these women physicians have remained professionally active, that 82 per cent of the married women have remained in professional work. We sought the corresponding figures for psychologists (Table 10).

We chose for investigation the entire population of American women PhDs in psychology, PhDs conferred in the vigentennium 1921–1940. Omitting persons with Asiatic names, we had a list of 440 women. For each of them we chose a man, with a PhD in psychology in the same year from the same university when possible, or in nearly the same year when an exact match was impossible. We made a few other arbitrary adjustments, like pairing Bryn Mawr with Princeton. The lists of PhDs in psychology were obtained from published compilations (*3*, *7*) and from the files of the Research Information Service of the National Research Council. Thus we had the names of 440 women, practically the total population for the period, and of 440 men matched to

them, about half the corresponding male population: 880 persons in all. Some of them were deceased, but we did not know it.

On 1 December 1945 we sent a letter to the latest address obtainable for each of these persons, using professional directories whenever possible, or writing to the alumni offices when the degree holder seemed to have disappeared professionally. With the letter we sent a reply post card, requesting the recipient to cooperate with us by agreeing to fill out anonymously a detailed questionnaire containing many items of a personal nature. Of the 880 persons, 499 returned the post card. Each of them was sent a questionnaire at once on the return of his post card. Of these 499 questionnaires, 426 had been returned by 20 April. On 15 January we sent questionnaires to the 381 persons who had not returned the post card; 66 of these persons later returned the questionnaire. There were 8 questionnaires received late and not used, one of them in October, 46 weeks after the original letter had been mailed to the respondent. Table 1 analyzes the nature of the returns.

We finally went to work with two samples: 245 women out of the population of 440, and 247 men out of a population which must number about a thousand, since the women are known to constitute from 30 per cent to one-third of the psychologists.

In the following tables we have, for the most part, presented the results in terms of percentages of the total sample for each sex. For women N is 245, for men 247. This percentage value shows the relation of each category to the total better than do the actual frequencies. When categories are not mutually exclusive, the total is, of course, greater than 100 per cent.

TABLE 1

Analysis of returns of the questionnaire

	WOMEN		MEN		TOTAL	
Original matched populations		440		440		880
Rejected later as in error						
Degree not in psychology	30		31		61	
Deceased	15	45	21	52	36	97
Corrected populations		395		388		783
Unavailable for study						
Latest known address inadequate	39		47		86	
Declined to answer questionnaire	3		1		4	
Returned questionnaire too late	3		5		8	
Returned postcard but not questionnaire	45		28		73	
No reply to either of two requests	60	150	60	141	120	291
Questionnaires returned for study						
After first request by postcard	213		213		426	
After second request with questionnaire	32	245	34	247	66	492
Proportion of corrected population who made returns	$\frac{245}{395} = 62.0\%$		$\frac{247}{388} = 63.7\%$		$\frac{492}{783} = 62.8\%$	

In some tables where the no-answer category is large, we have defined the population more narrowly and used a correspondingly smaller but more significant N. For instance, in certain tables where marriage is important, we have separated the 106 unmarried women from the 139 married women and compared the latter with the 234 married men, ignoring the 13 unmarried men as too small a sample to have significance. In all cases the tables show the size of N and thus indicate whether the class is restricted. When N is less than 247 for all men or 245 for all women, it means that the no-answer category

is omitted and that percentages are based on the total number of positive replies.

Physical Characteristics. The median age of the women in our sample was 44.5 years, of the men 42.1 years (Table 2). One year of this three-year difference results from the fact that the women took their doctorates on the average about one year later than the men (Table 5). The other two years must be the result of other selective factors which affected the returns.

The median height of the women was 5 ft. 5 in. and of the men 5 ft. 10 in. The median weight of the women was 132 lbs., of the men 164 lbs. About 35 per cent of both women and men reported themselves as "unusually robust," and about 60 per cent as "about average" in health.

TABLE 2

Age

BIRTH	AGE	WOMEN	MEN
Before 1890	Over 50	9.4%	8.1%
1890–1894	51–55	18.0	13.0
1895–1899	46–50	20.4	14.6
1900–1904	41–45	15.1	21.1
1905–1909	36–40	22.8	22.7
1910–1914	31–35	13.9	18.2
1915–1919	26–30	—	2.0
No answer		.4	.4
N		245	247
Median		44.5 yrs.	42.1 yrs.

About 85 per cent of these 492 persons ventured, in response to our question, to rate themselves in respect of their dominant constitutional type. Of the women, 37 per cent claimed to be chiefly ectomorphic (asthenic), 44 per cent mesomorphic (athletic); of the men, 32 per cent ectomorphic, 52 per cent mesomorphic. This difference lies in the direction of desire, that women wish to be slim and men strong; yet it is noteworthy that mesomorphy is the most frequently reported category for each sex. The fact that less than a fifth of these academics claim to be endomorphic is consistent with casual observation that pyknic psychologists are not much in evidence at meetings of the APA.

Family Background. The family background of these psychologists, while fairly heterogeneous, is above average with respect to the education of the parents and their socio-economic status. About 17 per cent of the mothers of the women and 15 per cent of the mothers of the men were college graduates, while 40 per cent of the women's fathers and 31 per cent of the men's fathers were graduated from college (Table 3). Although not many of the mothers have advanced degrees, 13 per cent of the men's fathers and 22 per cent of the women's fathers went beyond college to take a second academic degree. The parents of the women, as a group, reached a somewhat higher educational level than did the men's parents. More than twice as many of the parents of the men, as compared with the women's parents, did not finish grammar school. Almost half of the women's mothers completed high school, as compared with only 35 per cent of the men's mothers. One or more advanced degrees were held by 22 per cent of the women's fathers and by only 13 per cent of the men's fathers. This difference may mean that the women needed a more favorable environment in respect of the educational status of their parents than did the men in order to achieve a PhD degree and embark on a career. It seems likely that parents with better education and the economic status that goes with a better education would more often manage to "send" their daughters as well as their sons to college and later to graduate school. Nor are there many families who would finance a PhD for a daughter when they could not afford one for a son.

TABLE 3

Highest educational level of parents

LEVEL	MOTHER		FATHER	
	Women	Men	Women	Men
Did not finish grammar school	7.3%	15.4%	8.6%	18.6%
Completed grammar school	23.7	33.6	24.5	29.6
Completed high school	49.8	35.2	24.9	21.1
College graduate	14.3	14.2	18.0	17.4
One or more graduate degrees	2.4	.8	22.4	13.4
No answer	2.4	.8	1.6	—
N	245	247	245	247

These findings are reinforced by data on parental occupations (Table 4). Although the mothers of both men and women PhDs are predominantly classi-

fied as housewives, the percentage of women's mothers who have engaged in professional or semi-professional work is larger than the percentage of men's mothers. A preponderance of the fathers of both men and women PhDs are placed at the higher occupational levels; yet it is noteworthy that more of the women's fathers are in the professional and

TABLE 4

Principal occupation of parents

OCCUPATION	MOTHER		FATHER	
	Women	Men	Women	Men
Professional	4.5%	2.8%	37.9%	25.9%
Semiprofessional	4.1	1.6	5.3	4.9
Self-employed	.8	1.2	16.7	20.7
Proprietary	.8	.4	13.1	14.2
Managerial	.8	—	15.1	9.3
Sales work	.4	.4	4.9	4.1
Clerical	.8	.4	1.2	2.4
Skilled labor	.4	1.6	4.1	15.4
Unskilled labor	—	—	.8	2.4
Unemployed	1.2	4.1	1.6	1.6
Housewife	84.9	87.1	.4	.4
No answer	1.2	1.2	.8	1.6
N	245	247	245	247

managerial classes and fewer engaged in skilled labor than is the case with the men's fathers.

Of course, neither the women or the men PhDs any longer fit the cultural pattern in which they were, on the average, reared. Each is a selected superior group, deviating farther from the mean than the family background in which its members got their start.

This PhD population has many foreign-born parents. Of the men's fathers 26 per cent were foreign-born; of the men's mothers, 23 per cent; of the women's fathers, 19 per cent; of the women's mothers, 16 per cent. Again we see that the women had an educational and social advantage over the men in that more of their parents were fully Americanized.

The parents were mostly of middle age at the time of birth of our respondents the fathers of both men and women had a median age of about 34, the mothers a median age of about 29. Not many were over 40, almost none under 20. Thus they were of an age to give maximal assistance when their children could be going to college.

Development of Professional Interest. Table 5 shows the course of developing interest by our women and men in psychology as a career. The median history, if you are eventually to get a PhD, is that you get interested in psychology in your late teens or early twenties, decide to make psychology your profession when you are about 24 and then get your PhD when you are about 29. If you are a woman, your interest comes a little earlier and your degree a little later than if you are a man, but there is not a great deal of difference.

The women are more widely dispersed than the men in respect of the age at which they obtained the PhD. More women than men receive the PhD at the ages of 20–24 and also over 34. In the quinquennium 25–29, the PhD is given to 45 per cent of the men and to only 33 per cent of the women. The early female PhDs may result from the fact that women are apt to depend on parents for educational support longer than are men, and the late female

TABLE 5

Early determination of interest in psychology

AGE	AGE AT TIME OF FIRST INTEREST IN PSYCHOLOGY		AGE AT TIME OF CHOICE OF PSYCHOLOGY AS A PROFESSION		AGE AT WHICH PhD WAS OBTAINED	
	Women	Men	Women	Men	Women	Men
Under 20	52.2%	40.1%	16.3%	8.9%	.4%	—%
20–24	32.6	44.1	44.5	51.4	22.8	19.8
25–29	9.0	12.6	20.4	30.4	33.0	44.6
30–34	3.7	2.4	10.2	6.5	20.8	20.3
Over 34	1.6	.4	6.9	2.8	21.6	12.2
Uncertain	.8	.4	1.6		.8	2.4
N	245	247	245	247	245	247
Median	Under 20 yrs.	21.1 yrs.	23.7 yrs.	24.0 yrs.	29.9 yrs.	29.2 yrs.

PhDs probably result from the retardation of professional progress by marriage and children.

Slightly more than two-thirds of both our groups (67 per cent of the women and 70 per cent of the men) hold an AM or MS degree in addition to the PhD. Only 2 women and 4 men also hold the MD degree.

Table 6 makes an attempt to get at some of the factors influencing the choice of psychology as a career. Interest in psychology, science, research and people—in that order—are given as the primary determinants. Such replies fail, however, to get below the surface. We had expected to find some differentiation between men and women in the categories near the bottom of the table, such as a difference in the desire to serve society or in the need for making a satisfactory living, but the table shows no such differences.

TABLE 6

Factors influencing choice of psychology as a career

	WOMEN	MEN
Interest in subject matter	80.0%	82.2%
Interest in science	53.9	60.8
Interest in research	55.1	56.7
Interest in people	63.2	51.8
Influence of parents, teachers, or advisers	49.0	41.3
Interest in social problems	40.4	36.9
Interest in solving personal problems	25.7	27.1
Desire to serve humanity	27.7	26.7
Prospect of professional advancement	17.1	22.7
Prospective employment opportunities	21.2	16.2
Expectation of personal prestige	11.4	15.8
Prospect of increased earnings	8.6	10.5
Other	17.1	12.6
N	245	247

Attitudes toward Training. One hears complaints enough about the inadequacy of graduate training. The constant effort of psychologists to improve professional training is in itself such a complaint. If we expected in Table 7 to find our respondents depreciating their own training, we were destined to be disappointed. Only about 6 per cent of our group were ready to admit the inadequacy of their own PhDs. Most respondents reported their training as "very satisfactory" or "fairly satisfactory," whereas less than a quarter found the training "satisfactory but too narrow."

The real state of affairs appears, however, in Table 8. The striking feature of these returns is that the respondents showed that they liked what training they had had but wished they had had more. The table represents 408 statements that the subjects named had been given too much emphasis in training as compared with 1,848 statements that the stated subjects had been given too little emphasis. It is natural for professional persons to wish that they had had more or better training, and this wish must be especially in evidence when new fields of professional activity are opening up, as they are in psychology at the present time.

The women, it will be seen, want more training in clinical techniques, in personnel procedures, in social psychology and anthropology, more practical field work and internships. The men wish they had more of all these subjects, and also stress statistics and social psychology. The women want more mathematics. Statistics is now clearly recognized as an essential tool of the applied psychologist and the women, as well as the men, want this kind of training. They may not find it easy, but they want it. In Table 8 there is no topic listed in which increased emphasis was not wanted by at least one per cent of the respondents, and there was no topic thought to have been emphasized too much by more than 17 per cent of the respondents. All knowledge is popular, but practical knowledge is especially desired.

The unpopular topics—those which get more votes for reduction than for increase—are the seven subjects listed at the bottom of Table 8. German is

TABLE 7

General evaluation of graduate training in psychology

	WOMEN	MEN
Very satisfactory preparation for professional work	42.8%	38.1%
Fairly adequate in scope and quality of instruction	24.4	34.8
Satisfactory instruction but too narrow in scope	25.3	20.7
Satisfactory coverage but rather poor instruction	2.9	3.2
Decidedly inadequate preparation for professional work	3.3	2.8
Other	10.6	6.5
No answer	—	.4
N	245	247

especially unpopular. That is because it is now used in scientific psychology much less than was the case only fifteen years ago, and it is used almost not at all by most applied psychologists. For similar reasons all required training in foreign languages tends nowadays to be disliked. The objection to laboratory courses and to experimental psychology shows the current trend away from the laboratory to the clinic and the personnel office. The dislike of history of psychology and of systematic psychology corresponds with the migration of modern psychology away from the more conversational techniques of the older, pedantic, philosophical psychology toward experimental psychology to a considerable extent, and toward applied psychology to an even greater extent.

TABLE 8

Specific evaluation of graduate training in psychology

FIELD	TOO MUCH EMPHASIS		TOO LITTLE EMPHASIS	
	Women	Men	Women	Men
Practical field work	—%	.8%	35.5%	37.3%
Clinical techniques	—	1.2	42.0	36.0
Mathematics	1.2	2.0	15.1	29.6
Sociology and anthropology	.4	.4	24.5	29.6
Personnel procedures	—	—	24.9	28.8
Internship	—	.8	29.0	27.5
Statistics	4.9	3.6	14.7	24.7
Social psychology	—	.8	13.5	21.5
Test construction	1.2	1.6	14.3	19.0
Biology	.8	1.6	18.8	18.2
Industrial psychology	.4	.8	13.9	16.6
Physiology and neurology	1.6	8.9	23.7	15.0
Abnormal psychology	1.2	.4	12.6	14.6
Philosophy	2.0	5.3	6.9	13.0
Natural science	—	.4	10.6	11.7
Physiological psychology	3.3	7.3	9.8	9.7
Test administration	1.2	2.8	7.3	6.9
Laboratory research	1.2	6.1	4.1	6.1
Experimental psychology	6.9	8.9	4.9	6.1
Systematic psychology	4.1	11.3	4.9	5.3
German	8.2	16.6	1.6	4.9
History of psychology	3.3	6.9	3.3	4.5
Laboratory drill	4.9	7.7	4.1	4.1
Other foreign languages	4.9	13.0	2.9	2.8
Other	2.9	1.6	6.9	8.1
N	245	247	245	247

Prejudice and Employment. One section of our questionnaire dealt with reasons for the failure of our respondents to obtain desired employment. Except with respect to sex, they seem not to have experienced much "unfair discrimination" based on factors unrelated to proficiency in the job. An employer is justified in rejecting the less competent candidate, the inexperienced or insufficiently trained person. The prejudice against youth is not necessarily wrong, nor is the prejudice against advanced age.

There were 22 men and 11 women who reported believing that they had lost appointments because of their religion, and to these we might add with the anti-Semitic prejudice in mind the 5 men and 3 women who checked nationality or race as the reason. That gives 41 persons in 492 (8 per cent). That number is smaller than we expected, but we do not know how many of our PhDs would ordinarily be considered to be "Jews." The category is somewhat indefinite.

Only 11 of the 492 persons reported losing appointments because of political views or activities.

Sex remains the great prejudice. The sort of sex not to be if you want a good job is female at least that is what both men and women believe. The men report only a trace of sex prejudice against them (1 man in 247), but 61 of the 245 women think that they have at some time failed of receiving a desired appointment because they were women. On the other hand, we shall see presently that there are situations in which it helps professionally to be female.

Professional Employment. We asked our respondents to check a list of ten methods of getting new jobs, as to which they had found very helpful and which of little or no help. These results support the common belief. Psychologists of both sexes ordinarily depend on the recommendations of professors, friends, and departments to get new jobs, jobs for which they have not previously applied. They make little use as yet of employment agencies or placement bureaus.

Almost half the women and over a third of the men found their first paid employment in the field of psychology. The others worked from one to 12 years in other kinds of work. The median period of gainful employment before obtaining a job in psychology was 2.1 years for the men, but less than one year for the women.

We also asked our respondents to indicate how

many years of full-time employment they had had in psychological work, and how many years of part-time work (Table 9). The median values are 13.0 years of full-time employment for the men, 10.7 years for the women; 2.5 years of part-time employment for the men, 3.2 years for the women. We find these sex differences less than we had expected. Married women who now have only part-time positions often had some years of full-time professional work in premarital or preparental days.

The present status of the members of our sample in respect of paid employment is shown in Table 10. One woman in five has, in spite of a PhD in psychology, no paid employment in psychology. One man in forty with a PhD in psychology is not being paid as a psychologist. Only 71 per cent of the men and 59 per cent of the women have full-time jobs in psychology. Very many persons of both sexes combine part-time work in psychology with part-time work in something else.

The last row of Table 10 shows the percentage of the total time of the women respondents which they spend in psychological work and in nonpsychological. It gives also the comparable figures for the men. Altogether 237 men psychologists are spending 82 per cent of their time on psychology, whereas 234 women psychologists are spending only 65 per cent of their total time on psychology. This finding is not too good a showing for the women, who thus appear to make only a 65 per cent return on their training. It is also a poorer showing for the men than we had expected.

In general, what the men fail to do in psychological work they make up in other work. It is approximately legitimate to add the percentages from the two halves of Table 10 to find that these men have paid employment for 98 per cent and the women for 72 per cent of their total time. Such a finding does not, of course, mean that the women are idle 28 per cent of the time. Much of their unpaid work is doubtless socially useful (as housewife and mother) and may even depend on psychological training. Nevertheless this figure is to be contrasted with the finding of Lowther and Downes (4) that 90 per cent of women medically trained remain active in medical work.

Of the persons employed in nonpsychological work, 17 per cent of the women and 12 per cent of the men said that they would, if practicable, like to return to psychological work, whereas only 6 per cent of the men and 3 per cent of the women reported themselves as satisfied with their nonpsychological work. Most of the members of both groups were, however, uncertain of these answers or did not reply to the questions. A great many of the persons of both sexes who did reply reported that their psychological

TABLE 9

Number of years employment in full-time and part-time psychological work

YEARS	FULL TIME EMPLOYMENT		PART TIME EMPLOYMENT	
	Women	Men	Women	Men
None	9.0%	5.0%	25.2%	34.1%
1– 2	8.1	1.6	22.0	21.9
3– 4	6.4	5.0	24.3	22.8
5– 8	19.6	16.8	12.4	12.6
9–12	16.6	21.8	4.2	2.2
13–15	11.4	13.2	3.6	1.7
16–20	17.4	16.8	4.6	3.0
21–25	9.4	15.2	3.3	1.3
26 or more	2.1	4.4	.4	.4
N	235	243	218	229
Median	10.7 yrs.	13.0 yrs.	3.2 yrs.	2.5 yrs.

TABLE 10

Present paid employment status

TIME	PSYCHOLOGICAL WORK		NON PSYCHOLOGICAL WORK	
	Women	Men	Women	Men
None	20.6%	2.5%	39.6%	74.8%
0 up to $\frac{1}{4}$	7.3	4.2	14.1	4.4
$\frac{1}{4}$ up to $\frac{1}{2}$	3.9	8.8	14.1	2.2
$\frac{1}{2}$ up to $\frac{3}{4}$	5.6	4.6	11.4	8.8
$\frac{3}{4}$ up to full	4.3	8.0	10.6	7.7
Full	58.9	71.4	10.6	4.4
N	234	237	114	93
Per cent of total time of all the women or all the men	65.0	82.2	6.7	15.8

training had helped them "considerably" in their nonpsychological work. A few said that it has helped them "predominantly," and still fewer said "very little." These persons, in general, believe that the training has been good for them, as would seem likely, since a PhD carries prestige and a title, no matter in what subject it was obtained.

What these persons have been receiving in professional compensation is shown in Tables 11, 12, and 13.

Table 11 gives the overall results. It shows the distribution of maximal salaries received in any year by the women and the men in each of four age periods. The sizes of N vary, chiefly because young people can make no statements about what their salaries will be at older ages. The table shows that the chances of getting a high salary increase with age are greater for men than for women. The ratios of the median values indicate that these women have received about three-fourths as much compensation as the men.

TABLE 11

Maximal professional salary in any one year during stated age periods

SALARY	UNDER 30		30–39		40–49		50 & OVER	
	Women	Men	Women	Men	Women	Men	Women	Men
Less than $1,500	19.8%	10.8%	6.9%	.4%	2.3%	—%	7.2%	—%
$1,500 to $1,999	27.0	14.4	7.4	.4	2.3	.7	1.8	—
$2,000 to $2,499	25.7	26.1	15.2	3.4	9.8	1.5	3.6	4.0
$2,500 to $2,999	18.0	20.7	21.6	9.7	12.8	1.5	9.0	4.0
$3,000 to $3,999	7.7	20.3	29.4	30.7	30.8	20.4	30.6	8.0
$4,000 to $4,999	.9	6.3	11.5	21.8	30.0	29.9	28.8	26.0
$5,000 to $6,999	—	1.8	6.0	25.2	9.8	29.9	21.6	32.0
$7,000 to $9,999	—	.4	.9	5.5	.8	11.7	1.8	24.0
$10,000 to $14,999	—	—	.5	1.7	1.5	2.9	1.8	2.0
$15,000 to $19,999	—	—	—	.4	—	1.5	—	—
N	220	224	216	236	133	137	55	50
Median	$2053	$2485	$2970	$4230	$3744	$4622	$3912	$5308
Ratio (W/M)	.826		.702		.769		.737	

There are four factors which affect the data of Table 11 of which it does not take account. (1) There is degree of employment. We ought to separate persons employed full-time from those employed part-time, since more women than men have low salaries because they work only part-time. (2) We ought also to consider marriage. (We may ignore the 13 unmarried men.) With women, marriage favors part-time employment. Do married women with full-time employment make more or less money than unmarried women with full-time employment? (3) Then there is the depreciation of the dollar during the years covered by this study. Table 11 exaggerates the effect of age upon salary, because the younger age brackets include the salaries of the older people many years ago when salaries generally were lower than they are today. (4) And finally, besides the depreciation of the dollar through the years, there is the fact that maximal salaries during the last decennium were increased by the war situation, in which youth was more in demand than usual and young men in particular got higher salaries than they would normally have received.

Table 12 takes account of these last two factors—dollar depreciation and high pay for young men during the war. It shows salaries for the respondents at the present time, that is to say, it shows the maximal annual salary during the decennium in which the respondent's present age lies. The "under-30" category drops out because there were only five respondents still so young at the time of answering the questionnaire. The median salaries are higher than in Table 11. That, we think, is due to dollar depreciation. Salaries are the same for men in their thirties as for men in their forties. That, we think, is the effect of the war. Under ordinary conditions, the culture and group morale require that professional salary increase with age, even after ability has ceased to increase. Because of the war, these highly paid men in their thirties may, in their forties, get less increase than their morale needs. The women's medians in Table 12 are still only three-fourths as large as the men's or less, but these data still contain the returns of married and unmar-

ried respondents for both full-time and part-time employment.

Table 13 shows the median maximal salaries for persons who had full-time employment in psychology at the time of making the statement about salaries. If they were fully employed then, it is likely that most of them had been fully employed previously. The table is arranged by age-groups, by sex and by marriage. It does not correct for dollar depreciation or for war increases. It shows salaries increasing with age for all three groups—married women, unmarried women, married men. The married women seem to earn a little less at psychology than the unmarried women, who in turn earn less than the men, practically all of whom are married. The sex-ratios for the median salaries are of the order of 3:4 or 4:5.

That women psychologists, on the average, when fully employed, whether married or unmarried, make about 20 to 40 per cent less than the men, from $1,000 to $2,000 a year less, is not surprising. (Cf. [2], p. 78.) It is possible, however, that a great part of this difference derives, not from the fact that *women* are paid less than men in psychological work, but from the fact that *women's work* in psychology is less well paid than men's work. The individualistic personalistic work, that women on the whole do well and seem to like to do, does not lead readily to renown, whereas men usually achieve eminence by research and writing in which they deal with larger generalizations and not with case histories. This difference between the sexes shows up in studies made with interest inventories. See Terman and Miles (*6*). The difference may lie wholly in the culture, although some writers, such as Scheinfeld (5), do not think so.

Attitudes toward Professional Work. "If you had your life to live over again would you choose psychology as a career? Would you spend the time, money, and effort necessary to obtain a PhD in psychology?" More than two-thirds of the women and men say *Yes* to the first question, and three-fourths of them say *Yes* to the second. See Table 14. Less than a tenth of them say *No*. There is little difference between the replies of the two sexes, although the men seem a little surer than the women about going in for psychology again in their next incarnation.

"To what extent do you feel that your work in psychology has, on the whole, fulfilled your expectations?" another of our questions asked. About half of both the women and the men replied that their expectations had been fulfilled, whereas more than a third said that work in psychology is more satisfying than they had expected. Only a tenth expressed disappointment. Two-thirds of each sex, in replying to another question, indicated that training in psychology had "considerably" contributed to their personal individual adjustment. Thus it

TABLE 12

Maximal professional salary received in any one year during the age-decennium which includes the respondent's age in 1945

SALARY	30–39		40–49		50 & OVER	
	Women	Men	Women	Men	Women	Men
Less than $1,500	7.5%	1.0%	2.6%	—%	7.4%	—%
$1,500 to $1,999	5.0	—	1.3	—	1.9	—
$2,000 to $2,499	20.0	2.0	11.7	—	3.7	4.2
$2,500 to $2,999	17.5	1.0	10.4	—	9.3	4.2
$3,000 to $3,999	27.5	22.2	27.3	17.6	31.5	8.5
$4,000 to $4,999	12.5	23.2	33.8	31.6	22.2	25.4
$5,000 to $6,999	7.5	39.4	10.4	31.6	20.4	29.7
$7,000 to $9,999	2.5	7.1	1.3	11.7	1.9	25.4
$10,000 to $14,999	—	3.0	1.3	4.7	1.9	2.1
$15,000 to $19,999	—	1.0	—	2.3	—	—
N	80	99	77	85	54	50
Median	$2999	$5026	$3881	$5036	$3882	$5500
Ratio (W/M)	.597		.771		.706	

TABLE 13

Median maximal professional salary received in any one year during stated age periods for persons employed full time in psychology at the time of making the statement

The ratios are between the medians of successive columns

AGE AT WHICH SALARY WAS RECEIVED	Married Women	Unmarried Women	Married Men
Under 30			
Median	$2115	$2027	$2558
N	(54)	(74)	(147)
Ratio	1.043	.792	
30–39			
Median	3055	3333	4312
N	(56)	(74)	(155)
Ratio	.917	.773	
40–49			
Median	3375	4026	5000
N	(35)	(55)	(87)
Ratio	.838	.805	
50 & over			
Median	4167	4250	5142
N	(13)	(25)	(29)
Ratio	.980	.827	

TABLE 14

Acceptability of psychology as a career

If you had your life to live over again, would you . . .

	CHOOSE PSYCHOLOGY AS A CAREER?		SPEND THE TIME, MONEY, AND EFFORT NECESSARY TO OBTAIN A PHD DEGREE IN PSYCHOLOGY?	
	Women	Men	Women	Men
Yes	72.6%	67.6%	75.9%	77.0%
No	10.6	7.7	8.2	6.1
Uncertain	15.9	23.9	14.7	16.6
No answer	.8	.8	1.2	.4
N	245	247	245	247

TABLE 15

Attitude toward job

	WOMEN	MEN
Satisfied with job	41.6%	37.7%
Like job, but not entirely satisfied	41.6	41.7
Dissatisfied with job	4.9	4.9
Intend to get a new job as soon as possible	3.7	4.9
Other	4.9	1.6
No answer	4.5	.8
N	245	247

appears that, even among the women, there is not a great deal of explicit professional dissatisfaction. As a matter of fact, general dissatisfaction is hardly to be expected. To indicate dislike of one's basic work is almost to confess failure. Moreover, people get to like what they do continuously. This conclusion appeared also in our previous paper (2, pp. 74–76).

Table 15 deals with the psychologists' attitudes toward their jobs. They show more discontent with the job than with the profession, because the job, of course, more readily admits of being changed. There is not much sex difference evident in this table.

TABLE 16

Attitude toward professional advancement

	WOMEN	MEN
Content to hold present job without promotion or salary increase until retirement	14.3%	8.9%
Although now at probable maximal position and salary, feel capable of holding and would like position at higher level	10.2	17.8
Reasonable expectation of promotion and increased salary in present work	43.7	65.6
Ready for promotion and will not be content until it is received	4.1	8.1
Promotion has been delayed; somewhat discontented	2.0	4.5
Promotion is long overdue; quite dissatisfied	2.0	1.2
Other	23.3	8.5
No answer	12.6	2.0
N	245	247

About four out of ten respondents are "satisfied," another four "like the job but are not entirely satisfied," whereas one in ten is definitely dissatisfied or would like to change.

Do these psychologists expect advancement? See Table 16. There is a sex difference here. More women than men seem content to hold their present jobs without promotion, fewer women say they expect advancement or feel capable of assuming more responsibility. On the other hand, nearly half of the women, two-thirds of the men, expect promotion and salary increases. Only 8 per cent of the women, 14 per cent of the men, express definite dissatisfaction.

Table 17 throws more light on this problem. Women have more vital outside interests than do men. A fifth of the men, but only a tenth of the women, report that their professional work is their major source of satisfaction. Of the men, 42 per cent say that their work contributes more satisfaction than any other of their concerns, whereas only 27 per cent of the women make this response. We see further that 29 per cent of the women report that other interests are more important to them than their professional work. For the men this percentage is less than 2. These women have made their adjustment in life, and a considerable part of their activities lies outside the profession. Presumably the greater portion of this outside interest is centered in the home.

We have still other data, not tabulated here, that support this view. Of the women 12 per cent report having given up professional work to assume "personal obligations"; of the men, only 1 per cent. Of the women 12 per cent said that they "regretted" giving up professional work and would like to resume part-time activity in psychology. There is, then, this faint protest, but it is not vociferous. How could it be? The mother, who now looks after her own children instead of administering tests to other mothers' children, in general accepts the pattern which the culture sets her, regretting a little but not protesting too much. There are a few exceptions, but usually successful adjustment to reality means that you accept what you can not change and also that you grow to like it. These psychologists, on the whole, know how to take their own therapy.

Effect of Sex on Career. Does being a woman interfere with a career as a professional psychologist? Yes. See Table 18. Both the men and the women think so. As the percentages diminish in the column for the men, they increase in the column for the women. It is easier for the men to obtain work. They earn more. It is easier for them to get their work done and they get promoted more readily. The fifth to the tenth items in the table all show the disadvantages under which the women work, whereas the men almost unanimously disclaim these disadvantages for themselves. The fact that the women are not, in general, protesting does not mean that they have no grounds for discontent. They have grounds, these grounds. And those champions who complain on their behalf are right insofar as equality of opportunity and equal rewards for equal services are the demands they make. On the other hand, it is clear that the women who find satisfaction outside the profession, in marriage and the home, are performing a social service by their contentment. The culture is changing slowly in these respects, and too rapid a change would create disequilibrium in unexpected places.

TABLE 17

Satisfaction derived from professional work as compared with other interests

	WOMEN	MEN
Professional work is major source	10.6%	19.0%
Work contributes more than any other interest	26.9	42.1
Work and other interests evenly balanced	38.3	35.6
Work contributes less than other interests	28.9	1.6
Other interests are major source	—	.4
Prefer to give up work in favor of other interests	.8	.4
Other	3.7	.8
No answer	19.6	3.2
N	245	247

TABLE 18

Effect of sex on professional career

The fact that I am a man (woman) has, in my opinion, affected my career in the following ways:

	WOMEN	MEN
Easier to obtain desired work	9.4%	80.6%
Increased earning capacity	.8	69.7
Easier to perform professional duties	9.8	63.2
Facilitated promotion	1.2	48.2
Little or no effect	25.3	12.2
Harder to perform professional duties	18.8	.8
Necessitated a change in vocational plans	11.0	.4
Harder to obtain desired work	35.9	.4
Chief factor in the abandonment of career	10.6	—
Retarded or blocked promotion	21.2	—
Decreased earning capacity	51.8	—
Other	14.3	1.6
N	245	247

It is interesting to note, on the other side of this question, that Table 18 shows a fourth of the women saying that their sex has made it easier for them to obtain desired work. Who are these women?

Presumably the women who have the 'women's jobs' in psychology—the jobs in the schools, educational systems, clinics, guidance centers, hospitals, and custodial institutions (*2*, p. 74). There are many positions in which an employer wants a woman because of her feminine interests or because of the way in which other people respond to a female stereotype. It is true that he does not pay her more than he would pay a man, in spite of the fact that he may expect her to do the work better than a man. The individual employer is either in competitive business or he is a fiduciary, and in either case he must pay as little as possible. The remedy for this discrepancy lies in a slow change of cultural pattern, not in individual generosity.

TABLE 19

Marriage: present status

	WOMEN	MEN
Single	43.2%	5.3%
Married	46.9	92.7
Divorced	5.3	1.6
Widowed	4.5	.4
N	245	247

TABLE 20

Attitude toward present marriage

	FULL-TIME EMPLOYMENT		LESS THAN FULL-TIME EMPLYOMENT	
	Married women	Married men	Married women	Married men
Well satisfied and enthusiastic	72.6%	67.3%	71.5%	59.0%
Fairly well satisfied	6.8	24.4	19.4	29.5
Satisfactions balance dissatisfactions	6.8	7.3	11.9	6.6
Dissatisfied, but do not wish divorce	6.8	2.6	—	3.3
Dissatisfied and would like divorce	2.3	.7	—	—
Other	4.5	.7	—	1.6
N	44	152	67	61

Relation of Marriage and Children to Career. Of the 247 men, only 13 were unmarried, 229 were married, 4 were divorced and 1 widowed. Of the 245 women, 106 were unmarried, 115 married, 13 divorced and 11 widowed. (See Table 19.) In other words, almost all of the men but only half of the women are married. There are, of course, not enough husbands to go around in civilized countries, and more persons are born to be widows than widowers. See Scheinfeld (*5*, pp. 185–198). On the other hand, since the supply of living husbands is not yet down to one-half, it must be that some women choose a career in preference to marriage or are chosen for it.

Divorce is not very common. Only 26 men and 21 women have been divorced, three of them twice, none of them thrice. Of the 26 divorcés, 22 had remarried by the time the questionnaire arrived. Of the 21 divorcées, only 8 had remarried when they answered the questions.

What about children? The 139 married women have 183 children, 1.32 apiece. Forty-nine of these women have no children; 26 have one; 45, two; 11, three; 6, four; and 2 have five children. The 234 married men have 393 children, 1.68 apiece. Forty of the men have no children; 65 have one; 80, two; 35, three; 9, four; 4, five; and one man has seven children.

That is the objective picture of these marriages. We sought, however, to probe its subjective side. Table 20 shows about two-thirds of both women and men reporting that they are "well satisfied with and enthusiastic about" their marriages, about 90 per cent that they are at least "fairly well satisfied." The men are a little more enthusiastic than the women, and the women leave the question unanswered oftener. On its face, this is an optimistic picture, but the replies may seem a little too conventional. We tried to provide opportunity for complaint by presenting the respondents with a check list of 25 reasons for an "unhappy marriage." All the items except racial difference got some checks; none got many. The most common complaint was "temperamental incompatibility," checked by 24 men and 19 women. Only 59 men and 16 women admitted to any "marital unhappiness," and only half of them reported it as "chronic."

We get the same conventional answers when we ask whether the spouse helps the professional career. Half of the married women and a third of the married men report their spouses as enthusiastically supporting their professional work. Others check lesser degrees of interest and help. There is very little

disinterestedness, disapproval or interference reported from spouses of either sex.

We also asked the direct question: Does marriage help a professional career? Table 21 gives the answers. Consider first the married persons who have full-time jobs in psychology. One such man in seven regards his marriage as professionally indispensable, and three men in four say that marriage is definitely a professional asset. For the men marriage forms the proper background for a career. The women report differently. Only half as many women as men indicate that marriage has definitely been for them a professional asset, whereas a quarter of the women say that it has "made the pursuit of a career more difficult." Perhaps the wonder is that more women claim to have been aided professionally by their marriages than claim to have been hindered. That is the report of these women with full-time jobs in psychology.

The other half of Table 21 shows a greater effect of marriage on careers for women who are not fully employed in psychological work. The married men with only part-time work in psychology do not differ greatly in these returns from the men with full-time psychological employment. In no case is marriage reported as the reason for a male PhD's abandoning his career. On the other hand, a quarter of the married women with part-time work in psychology report abandoning their careers on account of marriage. An additional third say that marriage has made their careers more difficult. Only a fifth of the women in this category find that marriage has helped them professionally. Undoubtedly, the reason most of these women are working only part of the time is that marriage and career have been in conflict.

In general, combining the two halves of Table 21, we note that 72 per cent of the married men find marriage a professional asset, whereas on'y 5 per cent find it a hindrance. Of the married women, 28 per cent find marriage a professional asset and 34 per cent find it a hindrance or even a cause of abandoning a career. It is reassuring to hear that marriage may help a woman in a career in psychology, for it was to be expected that woman's work in psychology might often be done better by a wife or a mother. Moreover, the data for women's satisfaction with their marriages indicate that not all women who find their careers hindered by their marriages are willing to report their marriages as other than satisfactory or even satisfying.

Children interfere with a woman's career even more than marriage. See Table 22. The discussion of this table would follow the lines of the discussion

TABLE 21

Effect of marriage on professional career

	FULL TIME EMPLOYMENT		LESS THAN FULL TIME EMPLOYMENT	
	Married women	Married men	Married women	Married men
Indispensable factor in professional achievement	5.1%	13.4%	4.0%	8.8%
Definitely an asset	33.8	59.8	17.3	57.3
Advantages balanced disadvantages	15.2	6.7	16.0	5.9
Little or no effect	20.3	15.9	4.0	26.5
Made pursuit of career more difficult	27.0	6.1	31.9	1.5
Chief factor in the abandonment of career	—	—	23.9	—
Other	8.5	1.8	22.6	5.9
N	59	163	75	68

TABLE 22

Effect of children of respondent on professional career

	FULL-TIME EMPLOYMENT		LESS THAN FULL-TIME EMPLOYMENT	
	Mothers	Fathers	Mothers	Fathers
Major factor in professional achievement	9.4%	3.0%	7.3%	—%
Definitely an asset	28.2	42.2	14.6	39.7
Advantages balanced disadvantages	12.5	14.1	7.3	9.5
Little or no effect	9.4	41.4	7.3	41.6
Definitely made pursuit of career more difficult	47.0	5.2	41.9	7.6
Chief factor in the abandonment of career	3.1	—	34.6	—
Other	9.4	3.0	20.0	7.6
N	32	135	55	53

of Table 21, except that the percentages of disadvantage for women are higher. If the two halves of the table are combined, we discover that 25 per cent of the mothers report their children as professional assets, and that 60 per cent of the mothers report their children as professional liabilities. Forty per

cent of the fathers think of their offspring as assets; only 5 per cent think of them as professional liabilities.

If we compare marriage and children as professional assets and liabilities, we find that marriage and children are about equal as assets for women and as liabilities for men. Marriage (72%) is a greater asset for men than are children (29%). Children (60%) are a greater liability for women than is marriage (34%). That all makes sense. The men are helped professionally by the social status of marriage and in that respect a wife is more important than children. The women are helped, when they are helped, by their experience with children. It is presumably the wives who are mothers who most often find marriage advantageous professionally. On the other hand, it is clear that the careers of women are balked to a considerable degree by the responsibilities of childless marriage and even more by motherhood.

Professional Activities Outside of the Job. There is little sex difference in the degree to which men and women join professional organizations. Six per cent of the women belong to no organization, 2 per cent of the men. Seventeen per cent of the women belong to "more than six professional societies," 14 per cent of the men. The men belong on the average to 4.4 different societies, the women on the average to 4.6. The men have averaged 1.2 "offices or committee chairmanships during the last three years," and the women have also averaged 1.2. There is no evidence of discrimination against women in respect of their holding office. The women averaged attendance at 3.1 meetings a year, the men at 3.0.

Table 23 enquires into the amount of professional reading for which our respondents find time. The table gives the distributions, but the crucial items are the average numbers of hours per week given to reading. The generalizations from the table are obvious. The men read more than the unmarried women, who read more than the married women. Men and women with full-time professional employment in psychology read more professional literature than do the others who have less than full-time employment in the field. It is to be expected that persons with part-time work in the profession would do less professional reading than persons with full-time employment. It might also be expected that married women in both these categories would find less time for reading than would unmarried women. We have already recognized the woman's conflict between marriage and career; reading would suffer when pressure for time is great. But why do the unmarried women in both of these employment categories consistently read less than the men, only about 90 per cent as much? It seems possible to us that we are here again in the presence of a basic difference, that 'women's work' in psychology involves less time spent on technical reading than does 'men's work.' We shall return to this point in a moment after we have examined the sex differences in respect of research and writing.

TABLE 23

Hours per week spent in professional reading

HOURS	FULL-TIME EMPLOYMENT			LESS THAN FULL-TIME EMPLOYMENT		
	Married women	Unmarried women	Married men	Married women	Unmarried women	Married men
None	1.7%	2.6%	1.9%	13.9%	4.4%	4.4%
1– 3	41.3	27.7	19.2	41.7	26.1	33.8
4– 6	27.5	35.6	37.8	25.0	47.9	25.0
7– 9	10.3	11.9	18.0	11.1	8.7	14.7
10–12	13.8	14.5	12.4	4.2	4.4	11.8
13–15	1.7	2.6	6.2	4.2	8.7	7.4
16–18	1.7	2.6	1.2	—	—	—
More than 18	1.7	2.6	3.7	—	—	2.9
N	58	76	162	72	23	68
Average	5.4 hrs.	6.2 hrs.	6.9 hrs.	4.0 hrs.	5.2 hrs.	6.0 hrs.

Table 24 shows the hours per week spent in professional research and writing. For persons with full-

time employment in psychology there is no difference in the average number of hours which the married and the unmarried women spend in research and writing, but there is a large difference between the women and the men. The men spend almost twice as much time in this way as do the women. These relations are not so clear for persons in part-time employment, who spend altogether much less time in research and writing. The men, it seems, are the researchers and writers, the women the practitioners.

If there are twice as many men as women in the profession and the men average twice as much research as the women, then the men would do four-fifths of the research and writing. We wonder if a check of the professional literature would substantiate this conclusion. It well might, but it would be difficult to make, for the sex of an author is not always apparent.

It is natural that reading, research, and writing should be associated. You have to read to do research and to write about it. Conversely, reading suggests research and sometimes stimulates writing. The unexpected item here is that women seem to do less research and to write less in proportion to their reading than do men. It may be that they assimilate without as great an urge to do something about what they learn. We hear that men are aggressive and women complacent, yet we must be careful about drawing that trite conclusion from our inadequate data.

A plausible hypothesis is that women on the whole are less prone to generalization than are men, that their work is often clinical or particularistic, that research is usually directed at generalization and that men, therefore, become more readily involved in it. If you do much research, you learn to write about it. To do research or to write requires that you read professionally. When you have learned to write you may begin to read and write about other persons' researches. Research and writing lead to renown, and renown leads to increased income.

Activities Outside of the Profession. We come now to domestic activities and personal involvement in family affairs. Table 25 shows how much time is spent on such activities and interests. The women, of course, give more time than the men to their families and to domestic work. The women average 14.1 hours a week (and that figure includes the unmarried women) and the men 10.1 hours a week.

TABLE 24

Hours per week spent in professional research and writing

HOURS	FULL-TIME EMPLOYMENT			LESS THAN FULL-TIME EMPLOYMENT		
	Married women	Unmarried women	Married men	Married women	Unmarried women	Married men
None	45.5%	33.8%	13.2%	54.3%	52.2%	17.9%
1–3	22.8	31.1	29.6	17.2	26.1	40.2
4–6	12.3	18.9	13.2	12.9	8.7	23.8
7–9	8.8	8.1	17.0	7.2	4.4	6.0
10–12	5.3	2.7	13.9	—	8.7	8.9
13–15	1.8	2.7	5.0	5.7	—	3.0
16–18	—	2.7	3.2	2.9	—	—
More than 18	3.5	—	4.4	—	—	—
N	57	74	158	70	23	67
Average	3.3 hrs.	3.3 hrs.	6.3 hrs.	2.9 hrs.	2.3 hrs.	3.9 hrs.

Just what do the women do as domestic activities, and what do the men do? Table 26 carries that answer. Mostly the women are engaged in general housework, after which come social entertaining, household and family shopping, family recreation, sewing and mending, child training and guidance, and so on through eight other categories of the check list of Table 26. That is a normal picture of what is supposed to be woman's work, her extraprofessional work. The domestic activities of the men are maintenance of property, family recreation, social entertaining, child training and guidance, general housework, and three other items. There are 46 men among the 247 who claim to do some general housework ("cleaning, preparation of meals, laundry, etc."). There are no men who regularly sew and mend. It is interesting that the men do

so many domestic things, even though many of the items in their list are on the gayer side of the family's responsibilities. The men are not, of course, so domestic as the women.

TABLE 25

Hours per week spent in familial or domestic activities and recreational activities

HOURS	FAMILIAL OR DOMESTIC ACTIVITIES		RECREATIONAL ACTIVITIES	
	Women	Men	Women	Men
None	4.3%	2.9%	1.7%	.8%
1– 3	6.5	7.6	16.4	20.5
4– 6	6.5	16.8	20.6	32.4
7– 9	10.3	16.4	21.8	17.2
10–12	11.6	17.6	20.6	16.0
13–15	11.2	15.5	9.7	7.4
16–18	6.5	8.0	5.5	1.6
More than 18	44.3	14.3	2.9	4.1
N	235	236	236	242
Average	14.1 hrs.	10.6 hrs.	7.3 hrs.	8.2 hrs.

TABLE 26

Domestic activities in which three or more hours per week are spent

	WOMEN	MEN
Maintenance of property	26.1%	62.0%
Family recreation	42.8	53.5
Social entertaining	54.7	41.7
Child training and guidance	29.4	23.9
General housework	79.2	18.6
Religious activities	14.3	15.4
Physical care of children	24.5	15.0
Household and family shopping	52.2	11.3
Household finances	11.4	4.1
Special problems of children	10.2	2.8
Personal shopping	14.3	2.8
Planning of household routines	22.3	1.2
Home nursing	1.6	.4
Supervision of domestic help	19.2	—
Sewing, mending, etc.	29.8	—
Other	7.8	5.3
N	245	247

The right half of Table 25 gives data about time spent in recreation. Actually not much sex difference is demonstrable here. The men average about 8 hours a week and the women about 7. We also asked the respondents about the days per year normally spent on vaction. The average for the men was 23, for the women 30 — three weeks for men and a month for women. Psychology has been primarily an academic profession, and these respondents in late 1945 were considering their past habits, not the future. Where then were the long three-month vacations that you hear about in this easy academic life? Only 15 per cent of the women and 5 per cent of the men got more than two months. Nor is a mere 8 hours of recreation per week more than a symptom of industry. These psychologists are a hard-working lot all in all an industrious, hard-driving crowd, ambitious, aware of shortcomings, dissatisfied with the present and yet in general content with the conditions under which they strive. The women and men are not alike, but they both work hard, accept the inevitable and try, not always successfully, to change almost everything else.

SUMMARY

1. We sent a questionnaire to each of the 440 American women who took PhDs in psychology in 1921–1940 and also to each of 440 men, matched individually to the women by university and date of PhD. The questionnaire dealt with matters that affect the professional careers of psychologists. We received replies from 245 women, which is about 60 per cent of the corrected population, and from 247 men, which is probably about 30 per cent of the corresponding male population. The replies are dated from December 1945 to April 1946.

2. The women PhDs appear to have had a family background more favorable to advanced education than the men PhDs. The women's parents had, on the average, more education than the men's. The women have fewer fathers who did not get through high school, more fathers who took advanced degrees after college. The women have fewer foreign-born parents. The women's fathers' jobs lie higher in the occupational scale than the men's fathers', and more of the women's mothers have had professional positions than have the men's mothers.

3. Here is the typical picture of how these persons decided to become psychologists. They became interested in psychology in their late teens. They decided on a career in psychology at about 24. They got the PhD at about 29.

4. These psychologists, in general, expressed

satisfaction with their professional training, and then went on to complain that they had not had more of it. In a list of 25 subjects in which graduate students can be trained, our 492 persons checked 1,848 subjects as fields in which they wished they had had more training and only 408 items as having been emphasized too much in training. This criticism reflects the shift in psychology away from the laboratory and old-fashioned scholarship toward clinical practice and personnel work. Both men and women would like to have had more training in clinical techniques, personnel procedures, field work, internships, and statistics, and less emphasis upon foreign languages (especially German), experimental psychology, laboratory practice, systematic psychology, and the history of psychology. Sex differences in these wishes are not striking.

5. We sought to assess the prevalence of prejudice as affecting employment. Employers are prejudiced against incompetence, sometimes against youth and sometimes against age. There is reported only a little prejudice against political views and activities, and not so much more against race and religion. Both men and women are convinced that there is much more prejudice against the female sex (and practically none against the male sex), but this fact must be considered in relation to the other fact that in some psychological work it is helpful to be female. Within professional psychology 'women's work' and 'men's work' are not always the same. (See item 10 *infra*.)

6. Seven men in ten, six women in ten, have full-time employment in psychology. The men, taken all together, spend 82 per cent of their time in paid psychological employment, the women 65 per cent of theirs. In all kinds of paid employment, the men spend 98 per cent of their time, the women 72 per cent. Responsibilities of the women for household and children do not count as paid employment.

7. Women get lower salaries than men, and married women slightly lower salaries than unmarried, even when all of the persons considered have full-time paid employment in psychology. Salaries tend to increase with age, and we think that the fact that men in their thirties have recently been doing as well financially as men in the forties is an artifact of war conditions. Some of our results are affected by the depreciation of the dollar in the last quarter-century, but we believe it is approximately true to say that, at the present time, women psychologists, when fully employed, whether married or unmarried, make, on the average, about 20 to 40 per cent less than men of the same ages, that is to say, from $1,000 to $2,000 a year less.

8. Most of these psychologists like their profession. Almost none of them regrets what he or she has done within or for the profession. There is a little more complaint about the present job than about the profession, but not much. The psychologists know how to accept the reality which is theirs.

9. The women seem almost as satisfied with their profession and their professional activities as the men, although they make it clear that marriage and profession are often in conflict. For many married women in psychology, responsibility to the family becomes more important than professional work. In the great majority of cases the women accept this potential conflict-situation, getting synchronous satisfactions from husband, children and work.

10. Both men and women think that women are, on the average, at a disadvantage professionally because of their sex. The men get work more easily. They earn more when they get it. In marriage they lack the women's conflict and perhaps for this reason are able to achieve more. They get promoted more readily. On the other hand, at least a fourth of the women claim that their sex has made it easier for them to secure desired work. Presumably they are the women with the women's jobs in psychology, the jobs in the schools, educational systems, clinics, guidance centers, hospitals, and custodial institutions. (Cf. item 17 *infra*.)

11. Both married women and married men like their marriages. We tried to give ample opportunity for complaint about marriage and we got complaints, but not in sufficient number to make us believe that there is much error in the direct statements that marriage is fairly satisfying or very satisfying to about 90 per cent of both groups.

12. On the other hand, the question as to whether marriage helps a professional career brings out a clear sex difference. For men marriage helps three-fourths of the time, and for women only a little more than one-third of the time. A quarter of the women with full-time employment in psychology say that

marriage makes a career more difficult, whereas more than half of the women with part-time employment in psychology either check the same statement or else note that marriage has caused them actually to abandon a career.

13. Children affect careers much as does marriage. Having children interferes more than a childless marriage with a woman's career. Having children advantages a man less in his profession than does marriage.

14. The women and the men show no sex differences in respect of the number of professional societies to which they belong, the number of offices and committee chairmanships which they hold, and the number of meetings which they attend every year.

15. Men and women with full-time employment in psychology do more professional reading than the others with part-time employment. Married women read less professional literature than unmarried women, and unmarried women a little less than men.

16. The married and unmarried women with full-time employment in psychology spend about the same amount of time in research and writing, but very much less time than the men.

17. We think that items 15 and 16 *supra* can be explained in relation to item 10, which in turn accounts for item 7. There appears to be a basic difference between the interests of women and men, a difference which may have been imposed by the culture. The interest inventories tend to bring out this difference. It is a plausible hypothesis that the men psychologists are, on the whole, more strongly motivated to undertake research and writing. Since research and writing, and the large generalizations that research yields and that are most appropriately written about, all lead to renown, the male psychologists become more famous than the female, and then receive larger salaries, partly for the reason that fame has a cash value.

18. The women in our group spend more time on domestic and familial activities than do the men, but the men spend a good deal of time in this way, mostly on the care of property. Almost one man in five reports doing some general housework, but none claims responsibility for sewing and mending.

19. Seven or eight hours a week is all the time that our psychologists average on recreational activities. There is no clear sex difference here; and our group contains few butterflies, either male or female.

20. The women average about four weeks' vacation a year, the men about three. The three-month summer vacation, which all academics were once supposed to have, seems to have disappeared from the calendars of the psychologists.

REFERENCES

1. BRYAN, A. I., AND BORING, E. G. Women in American psychology: prolegomenon. *Psychol. Bull.*, 1944, **41**, 447–454.
2. BRYAN, A. I., AND BORING, E. G. Women in American psychology: statistics from the OPP questionnaire. *Amer. Psychologist*, 1946, **1**, 71–79.
3. GILCHRIST, D. B., AND HENRY, E. A., EDS. *Doctoral dissertations accepted by American universities.* Compiled for the National Research Council and the American Council of Learned Societies by the Association of Research Libraries. 1933 *et seq.*
4. LOWTHER, F. DEL., AND DOWNES, H. R. Women in medicine. *J. Amer. Med. Assoc.*, 1945, **129**, 512–514. Also *Med. Woman's J.*, 1946, **53**, No. 2, 47–49.
5. SCHEINFELD, A. *Women and Men.* New York, Harcourt, Brace and Co., 1943.
6. TERMAN, L. M., AND MILES, C. C. *Sex and Personality.* New York, McGraw-Hill Book Co., 1936.
7. WEST, C. J., AND HULL, C., EDS. *Doctorates Conferred in the Sciences by American Universities.* Reprint and Circular Series of National Research Council. 1919–22, 1925–33. The data for 1922–25 exist only in the files of the Research Information Service of the National Research Council.

Comment

This is the first appearance of a new section in the American Psychologist. It will be published as frequently as space and the accumulation of appropriate material permits. It will contain criticisms of previously published articles, suggestions for teaching, research, or practice in psychology that are of general interest, letters to the editor, and similar contributions. It is started because of the receipt of some short papers criticizing articles published earlier and because some psychologists have expressed regret that the American Psychologist did not provide regularly for such controversial notes.

FOOTNOTE TO MILITARY PSYCHOLOGY

The voluminous literature of military psychology has been printed with hardly a hint that it differs from the psychological literature of peacetime. It does differ, significantly. One psychologist described the difference in these words: "Unlike the critical attitude that is usually present both in psychological articles and reviews, the literature of military psychology is surprisingly sweet in its absence of criticism (Harrell, Thomas W. Applications of Psychology in the American Army, *Psychol. Bull.*, 1945, **42,** 453).

Why the difference? In the opinion of this writer the causes are in the climate that surrounds military psychology. These causes are not news in themselves. But they have been insufficiently publicized with respect to their direct bearing on the literature of military psychology.

It is contended here that evaluation of wartime psychological writing requires consideration of three factors:

(1) Writing by military personnel must be submitted for approval. Psychological articles were no exceptions to the rule that higher officers had to pass on material before publication. Since it is the consistent policy of the Armed Forces to present themselves in a good light, the sweetness and lack of criticism of war psychology becomes understandable.

(2) Psychology in the Armed Forces is science under an authoritarian regime. In the last analysis an authoritarian regime decides on the basis of seniority and rank. Ideas in the Armed Forces tend to bear the rank of their contributors and take precedence accordingly. Criticism in this atmosphere may be restrained.

The military psychologist—like other scientists—was first an officer whose entire existence was subject to the absolute command of another officer. Only secondarily was he a specialist. To challenge opinions and methods of higher officers, whose insight into and acceptance of psychological procedures varied enormously, was to challenge in the face of almost unlimited power to alter unfavorably the personal and professional position of the individual psychologist. Perhaps this power was seldom invoked. But it was always there. How often military psychologists felt helpless in the presence of conditions that required remedy could be revealed only by soul-searching on their part.

(3) The ultimate judge of military psychology was usually not a psychologist. It was in the nature of wartime Armed Forces organization that the highest authority rested with professional military men whose knowledge of psychology, with the very best of intentions, made it impossible for them to look beyond the attractive colored charts presented to them and inquire into the actual value of the psychological work they represented. The extent to which approval of psychological work was based on speed, quantity, and apparent smoothness, is problematical to say the least.

The manner in which these three pressures operated differed with each individual psychologist, the nature of his assignment, and his rank, as well as the

6.8.76
9-10

education, personality, and rank of his commanding officers. It is difficult to believe that they failed to operate to some degree in every case. As a result, "the literature of military psychology is surprisingly sweet in its absence of criticism."

Can psychology, with its inquiring attitude towards questions which often touch personally the lives and prerogatives of the Armed Forces authorities, *ever* be free to function at its efficient best in that hierarchy? Can we afford sweetness and absence of criticism in a life-and-death emergency?

In the opinion of the writer the answer to both questions is negative. It is submitted that the place for military psychologists is outside the Armed Forces, acting freely in an advisory capacity.

ROBERT TYSON
Hunter College

ARE RAT PSYCHOLOGISTS RESPONSIBLE FOR FISSION?

In a recent article in THIS JOURNAL (September, 1946) Dr. David Krech called attention to a current trend toward fission between "experimental" and "professional" psychology. The present writer is well aware of the existence of this trend, and, with Dr. Krech, considers it deplorable, and wishes something could be done to effect not only greater cooperation between the "pure" pure psychologists (to use Dr. Krech's term) and psychologists who seek practical applications of the science, but also greater mutual admiration and respect for the efforts which each group is making to put psychology as a whole on a sounder basis. If such a state of greater cooperation, admiration, and respect is to be achieved, however, it ought not to involve either the complete dominance of the one group of psychologists by the other, nor a radical "about face" in attitude toward scientific values by either group. To the present writer, Dr. Krech's suggestions for "curing" fission seem to emphasize such an about face, particularly with regard to those psychologists whose experimental and theoretical contributions are based on studies of the rat.

There is no doubt that a thoroughgoing appraisal of the contributions of rat psychologists would be welcomed (especially by the rat psychologists themselves), but Dr. Krech's evaluation of the rat psychologist as being primarily a skilled rat-handler appears disparaging rather than appraising. Of course, Dr. Krech may feel entitled to belittle his own contributions to rat psychology, but were the present writer to evaluate rat psychology, he would rank those same contributions high in the list of important studies. Moreover, little is gained by attempting to assess the progress of comparative psychology in terms of the titles of published articles. Too often, unfortunately, little can be learned about the content of an article from reading its title. Dr. Krech cites, among such titles, one reading *An Experimental Investigation of the Law of Effect in the Maze-Learning of Albino Rats*. He proposes that the psychologist who produced this title and the study connected with it might better have spent his time conducting *An Experimental Investigation of the Law of Effect In Attitude Formation Among Republicans*.

The latter type of investigation obviously falls within the province of social psychology, and would probably yield data of considerable interest, but the title itself suggests certain hazards in scientific investigation which bear closer examination. For example, the present writer is much more certain of the meaning of the term *albino rats* than of the term *Republican*. In fact, unless the first investigation involved excessive use of visual cues, the term might just as well be shortened to *rats*, non-visual differences between albino rats and their pigmented relatives being scarcely worth considering in a learning experiment. Furthermore, no rat psychologist would be very curious to know whether the first experiment dealt with New York rats, Minnesota rats, or California rats, but who would venture to say the same for Republicans?

A comparison of the problems confronted by these two types of investigation points out very clearly that scientific study of man in his intricate social context is at once more direct and less general in application. To obtain more general findings it is necessary to extract man from his social environment or to study rats. The student who has learned his psychology on rats, or on man in the simple laboratory situation, has, it is hoped, developed some ideas about control of variables, and the dangers of over-generalization. Should this same student then engage in psychological work of a more practical nature, these ideas ought to transfer (despite Dr. Krech's skepticism regarding this point). The present writer must conclude that he would feel more sure of the study of Republicans if it were con-

ducted by an individual whose awareness of the limitations of psychology's tools had been sharpened in a few good laboratory experiments.

The study of man in his social contexts, political, racial, familial, etc., should be furthered, but the present writer believes, with Tolman, (*Science*, 1945, **101**, 160-166), that "there are certain basic laws and principles which can still be studied more conveniently and with just as much validity in rats as in men."

If the "pure" rat psychologists are not then to give up their work and all become socially-oriented psychologists, what is to be done about the portentous fission? One fundamental problem is reflected in the attitude of almost every beginning student of psychology, who asks, "What is this for?" By which he is likely to mean, "How can I use it—and in a hurry." He is impatient of an instructor who replies, "Slowly, now! Let's first acquire some skill in the use of the basic tools and techniques before we start practicing."

In every natural science, and in its applied branches, patience is the watchword. Actual application of the tools and techniques without diligent study of their bases is not countenanced. Imagine a physician without physiology! Most of the time, the student feels that his studies are to some degree pertinent, oriented toward the ultimate goal of professional practice. In this latter respect the experimental psychologist frequently fails; he does not maintain that orientation for his students. The present writer believes that this failing can be overcome if instructors, whether or not their primary interests are "experimental" or "professional", will encourage the student with the "applied" turn of mind to learn "How it works," as well as "What it is for." If this is done, the contributions of the rat psychologists, and the social psychologists, too, will take on new significance for both student and instructor, resulting in a greater degree of transfer from pure to applied fields of endeavor.

C. W. CRANNELL
Miami University

MUST PSYCHOLOGISTS BE EXPERIMENTAL ISOLATIONISTS?

Psychologists spend too much time and energy upon research yielding only suggestive results. Work is wasted on samples that are too small for anything but pilot studies and on local studies whose significance for the field is obscured by the indeterminate effect of local conditions.

There is a need for coordinated research on significant problems. The same project should be carried out at a number of different institutions spread over the country and the separate findings pooled. The benefits of such an arrangement would be several:

(1) A reasonably large total N, perhaps one or several thousand instead of one hundred or less.
(2) Highly reliable findings as compared to those of the typical small study.
(3) A total population not affected by one set of specific local conditions.
(4) Adequate controls on particular factors such as age and education.
(5) Opportunity to determine the special influences operating in particular segments of the population.

Cooperative efforts are currently the exception in psychological research. However, the American Council on Education, the Cooperative Test Service, and the Civil Aeronautics Authority have each sponsored research in which the same experiment was repeated in different places or for which data were obtained from many separate localities. Again, the May, 1946, *Newsletter* of SPSSI mentions a Committee on Cooperative Research.

The range of possible problems for such a coordinated research program is obviously very great. Psychologists interested in measurement know of many problems on adequate standardization and validation of testing procedures. Even the study of personality structure would benefit from coordinated projects where broad cultural influences could be separated from specific local factors. Again, intensive research on the dynamics of attitudes and prejudices should not be handicapped by the conditions in a particular locality. The reader can think of several definite problems in his own fields of specialization which call for a unified attack.

As a specific example, one project on which psychologists might work together is the development of measures to select graduate students and to predict their success in the various fields of psychology. Through the technical advantages listed above, cooperative efforts could yield an enlightened personnel selection program for psychology itself.

(*Concluded on page 28*)

Across the Secretary's Desk

REQUIREMENTS FOR MEMBERSHIP IN THE DIVISIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Each division of the APA has the right to establish its own requirements for membership as long as those requirements are not lower than those set by the APA as a whole. In so far as they have been announced, the division requirements are stated below.

Associates must first meet the general APA requirements before they can be considered for division membership. A prospective Associate may apply to the APA office at 1515 Massachusetts Avenue NW, Washington 5, D. C. for application blanks. These completed blanks should be returned to the APA office. The deadline is March 1. The Board of Directors will consider applications in March. Persons elected will be notified in April and may then apply to the divisions of their choice for division membership.

Applicants for election as Associates may qualify by meeting any one of the following four sets of requirements.

1. Have a doctor's degree based in part upon a psychological dissertation and conferred by a graduate school of recognized standing; or

2. Have completed at least two full academic years of graduate work in psychology in a recognized graduate school, and at the time of submitting application be devoting full time to graduate or professional work that is primarily psychological in nature; or

3. Have completed at least one full academic year of graduate work in psychology in a recognized graduate school plus at least one full year of experience in professional work that is psychological in nature, and at the time of submitting application be devoting full time to graduate or professional work that is primarily psychological in nature; or

4. Be distinguished scientists, educators, or other persons whom the Board of Directors may recommend for election.

Fellows of the APA must meet considerably higher requirements. They must:

1. Have a doctor's degree based in part upon a psychological dissertation conferred by a graduate school of recognized standing. (In exceptional cases this requirement can be waived by the Council of Representatives).

2. Have been elected as an Associate at some prior time. Direct election of Fellows is no longer possible.

3. Either have acceptable published research of a psychological character beyond the doctor's degree *or* have four years of acceptable professional experience subsequent to the granting of the doctor's degree.

4. Be recommended to the APA by one of the divisions. A present Associate who wishes to become a Fellow must apply to the secretary of the division of his choice. Secretaries of all divisions are named in the November, 1946 issue of THIS JOURNAL.

Listed below are the present requirements for membership for Associates and Fellows in each division. The expression "no special requirements" means that election as an Associate or Fellow is based solely on meeting general APA requirements and applying to the division by letter. Where special requirements are given, it is to be understood that the general APA requirements must also be met, but the two requirements are not necessarily additive. For example, when the requirement of Division 16 reads "Four years of experience as a school psychologist," this experience can also be applied toward the basic APA requirement.

Some divisions provide for a class of Division Affiliates. Specific requirements are not stated below, but the existence or non-existence of this provision is indicated.

Some divisions have not yet ratified their by-laws, and their requirements are marked "Tentative".

1. Division of General Psychology

Fellows No special requirement

Associates—No special requirement
Affiliates—Yes

2. Division on the Teaching of Psychology (Tentative)
Fellows—Being actively engaged in teaching in a recognized institution
Associates—Being actively engaged in teaching in a recognized institution
Affiliates—Not decided

3. Division of Theoretical-Experimental Psychology
Fellows—Acceptable published research in the field of theoretical and experimental psychology
Associates—No special requirement
Affiliates—Yes

5. Division on Evaluation and Measurement
Fellows—Either (1) acceptable published work in the field of evaluation and measurement beyond the doctor's degree, *or* (2) distinguished professional service in the field of evaluation and measurement
Associates—One year of acceptable training in research or practice in the field of psychological measurement
Affiliates—Yes

6. Division of Physiological and Comparative Psychology
Fellows—Being actively engaged in teaching and/or research in the fields of physiological and/or comparative psychology
Associates—Being either in training or in practice in the fields of physiological and/or comparative psychology or fields of closely allied interest
Affiliates—Yes

7. Division on Childhood and Adolescence
Fellows—No special requirement
Associates—No special requirement
Affiliates—Yes

8. Division of Personality and Social Psychology
Fellows—Application to Executive Secretary of APA
Associates—Application to Executive Secretary of APA
Affiliates—No

9. The Society for the Psychological Study of Social Issues—A Division of the APA
Fellows—Promise to aid the society in attaining its objectives
Associates—Promise to aid the society in attaining its objectives
Affiliates—Yes

10. Division on Esthetics
Fellows—Significant research contributions of direct value to esthetics and related areas
Associates—Published work in the field of esthetics and related areas
Affiliates—No

12. Division of Clinical and Abnormal Psychology
Fellows in Clinical Psychology—Not less than four years of successful full time clinical practice, or its accumulated equivalent, such as to yield a presumption of professional competence in (1) history or interview procedures, (2) techniques of psychological testing or personality evaluation, (3) the synthesis of case evidence, and (4) therapeutic or guidance counseling
Fellows in Abnormal Psychology—Either acceptable published research in abnormal psychology beyond the doctor's degree, *or* four years of acceptable professional experience in abnormal psychology subsequent to the granting of the doctor's degree
Associates—Satisfactory evidence of not less than two years of successful full time clinical experience, or its accumulated equivalent, such as to yield a presumption of reasonable competence in clinical psychology, *or* satisfactory evidence of two years of experience in professional work that is psychological in character in the field of abnormal psychology
Affiliates—Yes, including APA members who do not meet the above requirements

13. Division of Consulting Psychology
Fellows—Four full years of paid consulting experience subsequent to the granting of the doctor's degree
Associates—None admitted
Affiliates—No

14. Division of Industrial and Business Psychology
Requirements not yet announced

15. Division of Educational Psychology
Fellows Active interest in educational psychology
Associates Active interest in educational psychology
Affiliates Yes

16. Division of School Psychologists
    Fellows—Four years of experience as a school psychologist
    Associates—An M.A. or higher degree and two years of experience as a school psychologist, or be active in teaching, training, or administration of school psychology, or have made significant research contributions to the practice of school psychology
    Affiliates—Yes
17. Division of Counseling and Guidance Psychologists
    Fellows—At least two years of professional experience in a counseling or guidance activity or organization wherein they had individual responsibility for full case work
    Associates—Employment in a counseling or guidance activity or organization
    Affiliates—Yes
18. Division of Psychologists in Public Service
    Fellows—Active interest in the application or study of psychology in the public service
    Associates—Active interest in the application or study of psychology in the public service
    Affiliates—No
19. Division of Military Psychology
    Fellows—Satisfactory evidence of accomplishment in military psychology
    Associates—Satisfactory evidence of accomplishment in military psychology
    Affiliates—No
20. Division of Psychology of Adulthood and Old Age (Tentative)
    Fellows—Active interest in the work of the division
    Associates—Active interest in the work of the division
    Affiliates—Yes

TESTING IS BIG BUSINESS

Last spring Walter Dill Scott, who since his retirement from the presidency of Northwestern University has become Chairman of the Editorial Board of *Nelson's Encyclopedia*, wrote asking if it would be possible to secure reasonably accurate figures on the total number of psychological tests administered during one recent year and the total number of people to whom those tests were administered. He wanted the information for publication in *Nelson's Encyclopedia* as a brief and dramatic demonstration of the widespread use and influence of one psychological development. The principal publishers of tests and the government agencies which have produced most tests for government use cooperated by supplying figures or estimates of their own production for 1944 and the size of the population tested during that year.

The totals are large. During 1944 approximately 60,000,000 standardized tests were administered to approximately 20,000,000 people in this country.

Military use was responsible for a large part of these totals. The Adjutant General's Office administered 4,993,142 tests to 2,302,919 people in 1944, the Army Air Forces 10,000,000 tests to 400,000 people, the Bureau of Naval Personnel 9,000,000 tests to 1,250,000 people, and the Bureau of Medicine and Surgery 240,000 tests to 80,000 men. The rounded figures are fairly accurate approximations.

In the same year the Civil Service Commission administered approximately 1,800,000 tests to some 1,210,000 people and the U. S. Employment Service gave 479,248 tests to 170,152 people. Including the other government agencies which use tests would increase these figures substantially.

A fair estimate of the total number of standardized tests administered by educational institutions, business organizations, and personnel consultants can be obtained from the number of tests sold by commercial publishers and such non-profit agencies as the College Entrance Examination Board and the American Council on Education. The totals of the reported figures were 26,781,759 tests and 11,493,407 persons tested.

The above figures take no account of several test-producing agencies from which no reports were received. On the basis of their size in comparison with agencies for which we have data, it is safe to add several million to the total number of tests and people reported above, obtaining an estimated total of about 60,000,000 tests administered to about 20,000,000 people.

This is big business. When one adds the uncounted unstandardized tests which were influenced in their construction by standardized tests, a total is reached which any pioneer of the testing movement must find a satisfactory reward for his early enthusiasm and labor.

PSYCHOLOGICAL FRAUDS

During the past few months Post Office inspectors and attorneys have eliminated three mail order personality analysis and success courses. Each owner signed an affidavit promising to end his business and to return any mail that comes to him in connection with it.

Last summer an inspector and an attorney from the Post Office called upon me with a request for help in evaluating the materials used by the three concerns in the courses and services which they furnished to those who purchased the materials offered, and of the claims made in their advertising.

For a few dollars, one of the defendants sent four lessons that would, if the advertisements could be believed, give the purchaser friends, influence, better jobs, health, freedom from worry, and just about anything else he desired. For good measure the purchaser also got a cheap metal good luck charm. After reading them I had no more friends, no more influence, no better job, no better health, and no fewer worries than I had had before. Also, the inspector kept the good luck charm.

The postal authorities prepared a formal statement of charges. Presented with the charges, the author signed a "cease and desist" affidavit without letting the case come to trial.

The second case was that of a mail-order Ph.D. who sold a set of self-improvement lessons under the slogan *Psychology that works*. The trial was brief. After evidence showing that he had used the mails to make extravagant promises, and after I had testified that those promises could not be fulfilled by the lessons, the "Doctor" signed a "cease and desist" affidavit.

For a time the third case presented a more spirited opposition. The defendant had offered to make a personality analysis of anyone who sent him a one dollar fee and filled out his analysis questionnaire. In return for his dollar the purchaser actually received a three-page form letter. John G. Jenkins and I both appeared as government witnesses. Defense witnesses were a psychiatrist and a personnel manager. After a two-day hearing, this defendant also requested permission to sign an affidavit promising to end his personality analysis business.

These were the first three psychological cases which the postal authorities had ever attempted to bring to trial. When we first discussed these cases, the inspector explained that they had been hesitant to tackle them because of doubts of their ability to demonstrate that the claims made were actually fraudulent, and because of uncertainty about securing appropriate government witnesses. They were encouraged to learn that professional psychologists were interested in their problems and willing to testify.

The procedure followed in these cases was the same as that used in handling medical or stock-selling schemes thought to be fraudulent. A statement of charges is prepared. The defendant is served with a copy and ordered to appear for a hearing. The government case consists of presenting evidence to show that certain specified claims or promises were made and that the mails were used for that purpose. Later testimony then attempts to demonstrate that the claims were not fulfilled by the materials furnished the purchaser. The defense, of course, seeks to demonstrate that the claims were fulfilled. The trial is held before a Post Office Hearing Officer. Upon completion, the Hearing Officer has a complete transcript of the proceedings. A copy of the proceedings is given to the defendant who is allowed time to prepare written rebuttal. The Hearing Officer considers the transcript and the rebuttal and judges that the mails either were or were not used for fraudulent purposes.

If a fraud judgment is rendered, the defendant cannot receive any mail. All mail addressed to him is returned to the sender with a stamped statement on it indicating that a fraud judgment has been rendered. Since all his mail is treated alike, his gas bill, letters from friends, magazines to which he subscribes, and dividend checks go back to the sender unopened and with an announcement of the fraud judgment on them. This is not a pleasant penalty. In order to avoid the possibility of it, each of the three defendants in these cases promised to end their business before judgment was rendered. Signing the affidavits allowed them to continue to receive personal mail, and also allowed them to continue to receive any business mail not connected with the business against which fraud hearings were directed. Mail connected with that business they must return to the sender stamped to indicate that

the business has been terminated. Post Office inspectors may, of course, from time to time send letters to the old business to make certain that such mail is being returned in accordance with the signed affidavit. If the defendant violates his promises, a fraud judgment, with its attendant penalties, is immediately rendered.

In addition to the civil proceedings outlined above, the postal authorities may present fraud cases to the United States District Attorney for criminal action. If a criminal trial is held and the defendant found guilty, penitentiary sentences may be imposed.

The postal regulations obviously do not begin to solve all the problems of eliminating psychological racketeers from the scene. State laws defining psychologists and establishing regulations for their training and practice are also necessary. The postal regulations do, however, provide a means of bringing to trial those who make fraudulent promises through the mails.—DAEL WOLFLE

(*Continued from page 23*)

While this proposal has certain rational points in its favor, there is at least one immediately apparent difficulty. Since such a program would have to be voluntary, how would the individual investigator be motivated to cooperate? Provision must be made for him to obtain recognition. Publication of a list of collaborators in the summary report would hardly be adequate. However, if they wished, several of the investigators could participate in working up the data from all the cooperating groups.

The proper organization of the project would help evoke cooperation. The first step would be to set up a committee of recognized research men, their job being to select those problems the solution of which is crucial to the advance of knowledge in particular fields. The committee might function within the framework of the APA. Having selected a feasible and critical topic for investigation, it would draw up an experimental design. Plans and necessary materials would then be distributed to professional colleagues having appropriate facilities and interest. The data would be analyzed under the direction of the committee. While the collaborator in the field could assist in this task, he need only administer his part of the project; this would require far less time and effort than setting up and executing any purely local research. Once the organization was functioning, each contributor would have the satisfaction of reading significant and definitive findings instead of the plethora of minor, indeterminate studies which fill many journals.

DONALD W. FISKE
University of Michigan

Psychological News and Notes

CHARLES H. JUDD, dean emeritus of education at the University of Chicago, died July 18, 1946 at the age of seventy-three years.

LORRAINE BOUTHILET, Managing Editor of the AMERICAN PSYCHOLOGIST for its first year, has returned to the University of Chicago to complete work for her doctor's degree.

ANNE ANASTASI has resigned from Queens College where she was chairman of the department of psychology. Dr. Anastasi's present address is 121 East 38th St., New York 16, New York.

DAVID P. BODER spent three months during the summer of 1946 in Europe studying displaced persons. Using a magnetic wire recorder, he recorded verbatim the stories of the DP's. Some Maquis and Spanish Loyalists who were deported to Germany by the Nazis were also included in the population interviewed. Dr. Boder covered a number of DP camps and children's colonies in France, Switzerland, Italy, and the American Zone in Germany. He has a total of 190 spools of recordings, mainly in German, Russian, Yiddish, Polish, and French.

Rohrer, Hibler and Replogle announce the appointment of OTTIS K. MCMAHON as a staff psychologist at their Chicago office. He was formerly an industrial psychologist of the American Optical Company.

BERNARD SLESS has returned to the position of Regional Chief, Division of Occupational Analysis and Industrial Services in the New York Regional Office of the United States Employment Service. During the war he acted as clinical psychologist in the Fourth Service Command Rehabilitation Center, Fort Jackson, South Carolina, and at the Branch U. S. Disciplinary Barracks, Fort Hancock, New Jersey.

REGINALD SWANN is now associate professor of psychology at the Teachers College of Connecticut, New Britain, Connecticut. Dr. Swann was formerly associate professor of psychology at St. Lawrence University, Canton, New York.

GEORGE W. BOGUSLAVSKY has accepted a position as an instructor at the University of Connecticut. Captain Boguslavsky's most recent Army assignment was instructing in the Adjutant General's School at Fort Oglethorpe. Previously he was in counter intelligence work in the Pacific Area.

Indiana University has increased the size of the department of psychology. Present members of the department are: B. F. SKINNER, chairman; J. R. KANTOR, W. N. KELLOGG, ROLAND C. DAVIS, MERRILL ROFF (on leave), DOUGLAS G. ELLSON, DELTON C. BEIER, WILLIAM S. VERPLANCK, JR., WILLIAM O. JENKINS, WILLIAM K. ESTES, DAVID T. HERMAN, P. E. LICHTENSTEIN, IRVIN S. WOLF, ROBERT E. DREHER, and S. L. GLAZER. Dr. Beier is the director of the psychological clinic. The most recent addition to the staff is SIDNEY W. BIJOU, who will arrive in February. He will have charge of the graduate studies in the psychological clinic.

F. C. BARTLETT of the University of Cambridge will give the Vanuxem Lectures at Princeton on February 25, 26 and 27, 1947. He will speak on "Group Contacts in Contemporary Society." The titles of the three lectures are "Psychology of the Large Social Group," "Forms and Results of Group Contact," and "Predictions in the Field of Group Contact."

Dr. Bartlett hopes to have the opportunity of visiting some of the other American universities before returning to England about April 18.

RITA M. TURCHIOE has accepted an appointment as a school psychologist in the Bureau of Child Guidance, Board of Education, New York City.

She was formerly a clinical psychologist at the Catholic Charities Guidance Institute, New York City.

SIDNEY W. KORAN has accepted the position of assistant personnel director for the New York activities of United Merchants and Manufacturers, Inc. Captain Koran recently returned from the Pacific for release to inactive duty after three years' service, principally as a Personnel Classification Officer in the Marine Corps.

LESTER R. ARONSON, assistant curator of the Department of Animal Behavior, American Museum of Natural History, has been appointed acting chairman and associate curator.

JACK MATTHEWS has joined the staff of the Speech and Hearing Clinic at Purdue University. In addition to clinical duties in speech correction, Dr. Matthews is in charge of statistics and evaluation in the clinic.

MAURICE H. KROUT, executive director of the Chicago Psychological Institute, has been invited by Nelson's Encyclopedia to act as editorial consultant for its forthcoming edition. His task is to assign and pass upon the approximately six hundred psychological and psychiatric entries.

The Committee on Student Affiliates has selected LAURENCE SIEGEL, MARGARET SHUTTLEWORTH and FRANK VANASEK as student representatives on the committee.

PHIL S. SHURRAGER has recently accepted the chairmanship of the department of psychology and education at the Illinois Institute of Technology. Formerly he was with the firm of Stevenson, Jordan, and Harrison.

RICHARD W. FAUBION, Lt. Col., A.C., has been assigned to duty as Chief of the Psychological Section, Office of the Surgeon, Headquarters, Air Training Command, Barksdale Field. Col. Faubion has accepted a commission in the United States Army.

WILLIAM B. ANTELL, formerly of the public school system of Ithaca, New York, has been appointed assistant professor at Union College, Schenectady, New York. A gift of $50,000 has been received by Union College for the remodeling of the laboratory of psychology. It is being equipped for the special purpose of psychological measurements, including sound and vision observation screens and a modern recording and communications system. The Character Research Project, under the guidance of the chairman of the department, ERNEST M. LIGON, is now in its twelfth year.

The District of Columbia Psychological Association held its first meeting December 4, 1946. THELMA HUNT, chairman of the department of psychology at George Washington University, was elected president. Other officers are ISABELLE V. KENDIG, president-elect; CHARLES N. COFER, secretary; CHARLES I. MOSIER, treasurer; MAX MEENES and DWIGHT CHAPMAN, members of the executive committee.

The District of Columbia Psychological Association is an outgrowth of the Washington-Baltimore Branch of the APA. The Washington-Baltimore Branch, which has been affiliated with the APA for a number of years, decided last spring to disband in order to allow the organization of separate associations for Maryland and the District of Columbia. The new association has adopted the stated purposes of the APA, and is requesting continued affiliation with the APA. Membership is open to any APA member employed or living in the region of the District of Columbia.

A psychology club has been formed under the leadership of PERCIVAL M. SYMONDS in New York City with representation from the fields of psychology, sociology, anthropology, psychiatry, psychoanalysis, and religion. The first meeting this fall was held on November 22. A report was presented by JOEL SHOR and SYLVIA BRECHER on "Hypnotic Regression." Meetings are held at the Men's Faculty Club of Columbia University.

The newly elected officers of the Psychology Section of the New York Academy of Sciences are: S. STANSFELD SARGENT, Barnard College, chairman and CLAIRETTE P. ARMSTRONG, Domestic Relations Court, New York City, secretary. Meetings are held the third Monday of each month at the American Museum of Natural History.

The fiftieth anniversary of the founding of the psychological laboratory at Wesleyan University, one of the first psychological laboratories in the country, was celebrated at Middletown, Connecticut on December 13 and 14. During the celebration, tribute was paid to the late Professor RAYMOND DODGE, long head of the psychology department, in whose memory a Raymond Dodge Memorial Fund is now being raised. Both the Connecticut State Psychological Society and the Connecticut Valley Association of Psychologists held business meetings at Wesleyan University at this time.

Bowdoin College has received three gifts from psychologists. They were left the libraries of CHARLES T. BURNETT, formerly professor of psychology there, and of EDWIN B. HOLT. LEWIS W. KLINE has contributed his large collection of portraits of philosophers and psychologists.

Three members of the Executive Committee of the Division of School Psychologists, HARRY J. BAKER, president, MARGARET E. HALL, president-elect, and MILTON A. SAFFIR, secretary, met in Chicago on November 24. Committees were appointed and plans for activities discussed. Applications for membership may now be made on blanks which can be obtained from the secretary of the division. There is no established membership list, so that all who are interested in joining the division should apply for membership, even if they have previously indicated their wish to join.

In *Psychometrika* of September 1946, a method is described for using simple diagrams to compute tetrachoric correlation coefficients. The data needed to use these diagrams are limited to an easily computed ratio and the percentage differences between the two groups being compared. Reprints of these two articles, together with a set of 12 computing diagrams, are available for the asking from the Marketing and Research Service, Dun and Bradstreet, Inc., 290 Broadway, New York 8, New York, as long as the supply of copies lasts.

The Western State Psychiatric Institute and Clinic, under the direction of Saul Rosenzweig and Kate Levine Kogan, announces that two senior and two junior internships in psychology will be open in September 1947. Either men or women are eligible. These internships offer opportunity for supervised clinical and research experience with mental patients. Appointments are for twelve months and in all cases provide full maintenance at the institute. In addition, senior interns receive $110 per month. The qualifications for junior interns include the BA degree and undergraduate concentration in psychology with special reference to personality, clinical, and testing techniques. The senior intern must have an MA in psychology and considerable proficiency in clinical techniques. Applications will be accepted until March 15; appointments announced on approximately April 15, 1947. Inquiries should be addressed to: Grosvenor B. Pearson, M.D., Director, Western State Psychiatric Institute and Clinic, Pittsburgh 13, Pennsylvania.

The Psychological Services, Department of Social Welfare, 40 Fountain Street, Providence, Rhode Island, has a vacancy for a position of psychometrist, starting salary $2280. Inquiries should be addressed to Mrs. Helena H. Shea, administrator.

An assistantship is offered at Northwestern University Medical School for a graduate student in psychology interested in working for an advanced degree. The research will deal chiefly with experimental neurosis. Opportunity to study human material in the clinic and to take courses in the Medical School will also be available. The assistantship will pay $2400. Applications should be sent to Dr. Jules Masserman or to Dr. G. K. Yacorzynski, Department of Nervous and Mental Diseases, Northwestern University Medical School, 333 East Chicago Ave., Chicago, Illinois.

The APA Committee on Graduate and Professional Training in Psychology is revising the listings of graduate training facilities in clinical psychology published last May (*Amer. Psychologist*, 1946, **1**, 135–150). In order to secure up-to-date information, the committee has mailed questionnaires to the chairmen of departments offering graduate work in psychology. Any chairman who has not received one should write immediately to Robert R. Sears, State University of Iowa, Iowa City, Iowa, requesting the set of forms on which to submit information to the committee.

Convention Calendar

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

Date: September 9–13, 1947

Place: Detroit, Michigan

For information write to:

Dr. Dael Wolfle, Executive Secretary
American Psychological Association
1515 Massachusetts Avenue, N. W.
Washington 5, D. C.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Date: December 26–31, 1947

Place: Stevens Hotel,
Chicago, Illinois

For information write to:

Dr. John M. Hutzel
American Association for the Advancement of Science
1515 Massachusetts Avenue, N. W.
Washington 5, D. C.

ROCKY MOUNTAIN BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Date: May, 1947

Place: Colorado College
Colorado Springs, Colorado

For information write to:

Dr. Lillian G. Portenier
Department of Psychology
University of Wyoming
Laramie, Wyoming

THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

Date: April 4–5, 1947

Place: St. Louis, Missouri

For information write to:

Dr. Joseph Weitz
Sophie Newcomb College, Tulane University
New Orleans, Louisiana

SOUTHWESTERN PSYCHOLOGICAL ASSOCIATION

Date: April 4–5, 1947

Place: Dallas, Texas

For information write to:

Dr. L. B. Hoisington
Department of Psychology
University of Oklahoma
Norman, Oklahoma

MIDWESTERN PSYCHOLOGICAL ASSOCIATION

Date: May 2–3, 1947

Place: Edgewater Beach Hotel
Chicago, Illinois

For information write to:

Dr. Claude E. Buxton
Department of Psychology
Northwestern University
Evanston, Illinois

WESTERN PSYCHOLOGICAL ASSOCIATION

Date: June, 1947

Place: Los Angeles
(host institution to be announced)

For information write to:

Dr. Lester F. Beck
Department of Psychology
University of Oregon
Eugene, Oregon

ILLINOIS ASSOCIATION FOR APPLIED PSYCHOLOGY

Date: February, 1947

Place: Chicago, Illinois

For information write to:

Dr. Milton A. Saffir, Secretary
55 East Washington St., Room 1607
Chicago 2, Illinois

EASTERN PSYCHOLOGICAL ASSOCIATION

Date: April 25 and 26, 1947

Place: Chalfonte-Haddon Hall
Atlantic City, New Jersey

For information write to:

Dr. J. McV. Hunt
Institute of Welfare Research
Community Service Society
105 East 22nd Street
New York 10, N. Y.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION

Date: February 17–19, 1947

Place: Netherlands-Plaza Hotel
Cincinnati, Ohio

For information write to:

Dr. Nina Ridenour
N. Y. C. Committee on Mental Hygiene
105 East 22nd Street
New York 10, N. Y.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 February, 1947 Number 2

In this Issue

Research on Personnel Selection in the Royal Navy and the British Army: P. E. VERNON. 35

An Analysis of Duties Performed by Clinical Psychologists in the Army: MAX L. HUTT AND EMMETTE O. MILTON 52

The Place of Experimental Psychology in the Undergraduate Curriculum: ANNE ANASTASI 57

A Comparison of ASTP Psychology Graduates with Other Groups in the AAF Classification School: ARTHUR O. ENGLAND AND HARRY LAURENT, JR. 63

Naval Aviation Psychology. IV. The Central Research Groups: DONALD W. FISKE . . 67

Professional Frustration in Government Psychologists: WILTON P. CHASE 73

Across the Secretary's Desk 76

Psychological Notes and News 77

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Dael Wolfle, *Editor* Eugenia Norris, *Managing Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect

DONALD G. MARQUIS
University of Michigan
Ann Arbor

Recording Secretary

HELEN PEAK
Connecticut College
New London

Treasurer

WILLARD L. VALENTINE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Executive Secretary

DAEL WOLFLE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT
EDWARD C. TOLMAN
JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

RESEARCH ON PERSONNEL SELECTION IN THE ROYAL NAVY AND THE BRITISH ARMY

P. E. VERNON

University of Glasgow, Scotland

LITTLE has been published so far about psychological work in the British Fighting Services, partly because of security restrictions, but mainly because the psychologists involved have been too occupied by the work itself. Yet the scope of personnel selection, and many of the methods used and results obtained, have been quite comparable with those described by American psychologists. For example, the most widely used test—Progressive Matrices—has been taken by some three million recruits, and a battery of five or more tests by nearly two million men and women in the Royal Navy and Army,[1] and the latter have nearly all been interviewed by trained Personnel Selection Officers (PSOs) before allocation to the job, or the branch of the Service, considered most suitable. That is to say, at least as large a proportion of the population as in America has passed through psychological selection procedure.

The main differences between British and American work have resulted first from the much smaller number of fully qualified psychologists available here, and secondly from the much lower prestige of psychology among naval and military authorities during the pre-war and early war years. Barely twenty psychologists of senior standing were obtainable as technical staff for the Admiralty Senior Psychologist's Department and the War Office Directorate for the Selection of Personnel, most of them being seconded from the National Institute of Industrial Psychology. About another twenty with some pre-war training were brought in. But the vast majority of testers, interviewers, statistical and clerical assistants and administrators—who at peak periods numbered over two thousand—had to be trained almost from scratch as the work itself proceeded. Incidentally this meant that most of the skilled personnel were mainly engaged in organisation, propaganda and training, and that the staff available for technical research was far smaller still. In the Army roughly half of the qualified personnel were solely occupied in the development of officer selection methods.

Certain other handicaps deserve mention. Machine scoring of tests and tabulation of scores were impracticable, and though the sorting of Army recruits was done by Hollerith, the whole of naval selection procedure and almost all correlational or other statistical investigations in both Services had to be done by hand, with a limited number of electric calculating machines. Again the shortage of materials and the diversion of almost all skilled mechanics into the Services or into armaments production rendered it virtually impossible for psychologists to construct or maintain any tests involving elaborate apparatus. Even the paper shortage considerably restricted the use of tests containing spatial or mechanical diagrams and pictures.

No large-scale applications of psychology to military problems occurred in Britain during 1914–18, and the need for it was scarcely felt by the Navy and Army until the second year of this war. Moreover there did not exist, as in America, any strong central body for coordinating the efforts of psychologists, or for drawing the attention of the authorities to the contributions they could make. Hence although much work was done during 1939–41 by individuals and by University teams both for the Services, and on civilian problems such as evacuation of children, effects of air-raids, public opinion and morale surveys, psychology can hardly be said

[1] No mention will be made of the Royal Air Force, since the writer only possesses secondhand knowledge of its psychological work, whereas he was engaged on test development, validation and research projects both at the Admiralty and War Office for four years. The valuable investigations carried out for the Services by the Cambridge (*4*), and other University, psychological laboratories, by the National Institute of Industrial Psychology and other organisations and individuals, will also be omitted.

to have received full official recognition until the Admiralty and War Office departments were set up in the summer of 1941. Myers (*9, 10*) has described the establishment of the Army Directorate, and Tuck (*17*) gives a brief account of its activities. Garforth (*6*) deals with the working of the War Office Boards for officer selection. The general organisation of the Admiralty Department is covered by Rodger (*13*) and Straker (*15*), and of personnel work in the ATS (the women's Auxiliary Territorial Service in the Army) by Mercer (*7*). The present article is concerned only with psychological techniques and results.

TESTS

The main tests, their content, time limits, and scope of application are listed below.[2] Many others were tried out, or used for short periods, but discarded as less suitable, inconvenient, or poor in validity.

I. *Applied at Recruiting Centres on first call-up:*

1. Raven's (*11*) Progressive Matrices (20 mins.). Used as a first sieve for all naval and ATS candidates. A non-verbal general intelligence test based on diagrammatic analogies and sequences.

2. Modified Ishihara test of colour vision, given to all naval recruits.

II. *Standard naval battery, given at New Entry Training Establishments:*

3. Modified Shipley (*14*) Abstraction test (10 mins.). Verbal intelligence.

4. Modified Bennett Mechanical Comprehension test (15 mins.).

5. Arithmetic: four rules (2 mins.), mathematical questions (8 mins.).

6. "Squares" test of Spatial Judgment (10 mins.). Usually added to this battery were:

7. Dictation test, one of a number of standard 35-word passages.

8. Electrical Information (10 mins.) and Mechanical Information (10 mins.). Simple-response type questions.

III. *Standard Army battery, applied at Primary Training Centres:*

Nos. 1 and 4 above, and:

9. Arithmetic: four rules (6 mins.), mathematical questions (10 mins.).

10. Verbal test (16 mins.), based on synonyms, homonyms and rhymes.

11. Instructions or Clerical test (15 mins.). Checking, filing, classifying and coding combined in a single test.

12. Agility (1–2 mins.). Time taken to transfer metal rings from two upright pegs to two others 20 to 30 ft. away.

IV. *Standard ATS battery:*

Nos. 1, 4, 10, 11 above, and:

13. Arithmetic (10 mins.). Checking of computations.

14. Spelling (5 mins.). Underlining the correct spellings from among five incorrect versions of each word.

V. *Standard Army Officer battery, given at Selection Boards:*

15. A revised and more difficult form of Matrices (20 mins.).

16. A new and more difficult form of Abstraction test (20 mins.).

17. An omnibus verbal intelligence test of conventional type (20 mins.).

The majority of candidates took certain personality tests including:

18. A group word association test.

19. A thematic apperception test.

20. Practical tests of a less standardised kind based on military situations, "leaderless group" situations, etc. (*6*).

Supplementary tests applied to large numbers of, but not to all, recruits:

VI. *Royal Navy*

21. Clerical test, NIIP Group Test 25 (20 mins.).

22. Reading Comprehension (16 mins.). U. S. Navy test, given to most officer candidates.

Nos. 18, 19 and 20 were also adapted for naval use.

23. Kohs Blocks (10 mins.). New version by Trist and Misselbrook.

24. Comprehension, Similarities and Vocabulary from the Wechsler-Bellevue scale.

These two were chiefly used for individual testing of psychiatric cases; they were also often applied in the Army to borderline officer candidates.

25. A special battery for Submarine Detector trainees:

[2] The numbering of tests used in this article is not the same as that actually assigned to the tests by the SP Department and DSP.

a) Omnibus intelligence test, with oral directions
b) Choice reaction time
c) Auditory discrimination
d) Sense of pitch (Doppler effect).

VII. *Army*

No. 6 and:

26. Assembly (23 mins.). A mechanical test of the Stenquist type.

27. Signal Corps Code Aptitude test, original version (10 mins.). The U. S. Army Speed of Response test was adapted later.

28. Auditory Acuity, U. S. Group Dictation test.

29. Tests of Trade Knowledge. Information tests, simple-response type, for Instrument Mechanics, Fitters, Watchmakers, Radio Mechanics and some sixteen other trades (mostly 20–30 mins.).

VIII. *ATS*

Nos. 27, 28 and:

30. 'Mec' test (20 mins.). Stripping and assembling meccano models.

31. Typewriting and shorthand, standard passages.

IX. *Miscellaneous*

32. Translations of many of the above for use in Palestine, India, etc., and by several Allied Forces.

33. A battery of performance and verbal tests for African native recruits.

34. A battery of performance tests for Indian recruits.

DISCUSSION

Several general points call for comment. Although some of these tests are taken direct, or adapted from, American sources, it will be noted that the majority differ from American usage in demanding 'creative' rather than multiple-choice responses. Multiple-choice tests are still rare in British schools, hence it was thought that their unfamiliarity would constitute a handicap to low-grade recruits. The Army in particular had to accept—and made valuable use of—many men of mentally defective level. Test scorers had lists of all permissible responses, and frequent checks were made on their accuracy.

Testing time was severely limited, hence the shortness of most of the tests. It was not until psychological selection had won its spurs that more than one hour could be granted for testing at naval Training Establishments. The lack of alternative versions of most of the tests was a serious drawback, attributable entirely to shortage of staff. It is gradually being remedied now. Strict precautions against leakages were enforced, but when recruits needed to be tested a second or third time their results must often have been influenced by having taken the same versions previously.

British psychologists in general, and representatives of the National Institute of Industrial Psychology in particular (*12*) prefer not to lay great stress on tests alone. More importance was attached to the recruits' answers to a biographical questionnaire and to information elicited in an interview by a Personnel Selection Officer who, though usually lacking in academic psychological qualifications, had been carefully trained in interviewing technique (*8*, *25*) and in interpretation of test results, and had a considerable knowledge of civilian education and industry on the one hand, and of naval or military jobs and their requirements on the other hand.[3] It was laid down that no man was to be rejected from the Navy, or from any branch of any Service solely on the grounds of test scores. Low scores were to be regarded as a noteworthy fact, along with such facts as that the man had been a plumber, or left school at 13, or evinced a strong interest in mechanical hobbies, and so forth. Judgments of personality, work record, and the recruits' own interests had to be considered together with the test findings before the PSO decided what job, or class of jobs, to recommend.

Personality Tests. It will be seen that no personality tests or questionnaires are included in the list, except those used in officer selection. Undoubtedly such tests arouse more suspicion among British recruits than American, and are particularly unsuitable for low-grade, semi-illiterate men and women. They are apt also to be unpopular among naval and military authorities. Experiments were indeed carried out in the Army on several possible screening tests including word association, Cornell Index, Short Format of the NDRC Personal Inventory, adaptations of Group Rorschach, etc. But the most successful was the Bennett-Slater (*1*) questionnaire and cross-out test, where the neurotic

[3] It is not possible in this article to deal with the work of the Job Analysis sections of SP Department and DSP. Brief descriptions are given by Rodger (*13*), Tuck (*17*) and Mercer (*7*).

responses are ingeniously concealed. Neither this, nor an Interests Blank of the Strong type which also proved useful, were widely applied because of insufficient time and staff to score them. Instead PSOs were instructed to look out for unstables, possible troublemakers, men greatly lacking in "combatancy," and extreme mental defectives. Some 12 per cent of all Army intakes were referred to psychiatrists on these grounds for further interview, so that a large proportion of psychopathological cases was caught on entry. In the Navy it was found that women interviewers (of the Women's Royal Naval Service) could also pick out many of the undesirables without recourse to tests (cf. below).

Attainment Tests. Although no tests for assessing knowledge or skills acquired in training courses have been issued, requests for advice from psychologists have recently been coming in. A few attainment tests were constructed for special investigations, e.g. on teaching backward readers and on the value of instructional films. Comprehensive batteries of educational achievement tests were prepared for examining candidates for certain types of Army commissions.

TEST CONSTRUCTION AND STANDARDISATION

Calibration. Tests were standardised on representative naval, Army, ATS, or officer candidate populations. Norms were always expressed in terms of SGs—Selection Groups or Grades—corresponding to a 10:20:40:20:10 per cent distribution. The convenience of this scheme for exposition to laymen outweighed the disadvantage of its slight departure from normality.

In the Navy, scores on Tests 3 (doubled), 4, 5 and 6 were summed to yield a total score for general intelligence, known as T2. The standard deviations of these component tests were approximately equal. In the Army the SGs on Tests 1, 4, 9, 10 and 11 were summed to give a Total SG as a measure of general ability. It is noteworthy that these particular component tests were chosen on the basis of validatory evidence obtained from some 2,500 men in about twenty representative Army jobs. (The grounds on which the components of the U. S. General Classification Test were chosen do not appear to have been published (*27*).)

Item Analysis. Whenever possible, item validities were determined. Thus in preparing revisions of Bennett Mechanical (No. 4), some 500 recruits answered 120 items, and after training in various Army mechanical jobs were graded by instructors into above and below average mechanics, and the item passes were found for each group. Tetrachoric r's against this criterion were thus obtained, also partial r's with general intelligence and education held constant, and two parallel 48-item tests were made up from items which added most to the g and educational tests in the selection of successful mechanics. More often, however, an internal consistency criterion was employed.

Several techniques for calculating validities and consistencies of items were tried out. The quickest was to tabulate Passes on each item in the top, middle and bottom thirds on the criterion (or on the test as a whole), and then to read off chi-squared or r_t from graphs. Biserial r between the criterion scores of testees who passed or failed each item, although apparently the popular technique in America, was discarded since it frequently yielded coefficients greater than 1.0 when the distributions of criterion scores were non-normal. Correlation ratios (obtained from the ratios of variances Between Passes and Fails to Total Variance) were preferred, but are insufficiently comparable at different difficulty levels. It was found that the simple difference between the mean criterion scores of Passes and Fails on each item (which is of course a function of correlation ratio) is less affected by item difficulty. By graphing difficulty sigma scores against these differences, the most suitable items can readily be seen.

True item difficulties can only be determined from percentages of Passes if the experimental form of the test has been given with unlimited time. This may be impracticable, and some testees may omit or fail to reach certain items. Under such circumstances it was found that a very close approximation to the *relative* order of difficulty can be obtained from the mean of:

$$\frac{100 \times \text{Passes}}{\text{No. of testees}} \text{ and } \frac{100 \times \text{Passes}}{\text{No. attempting item}}$$

Reliabilities. Specimen repeat reliability coefficients are quoted in Table 1 for large samples in each Service retested after various intervals. Naval coefficients are lower, probably not so much because

of the longer interval as because the recruits were superior in quality at that time (only $3\frac{1}{2}$ per cent instead of 30 per cent falling in Grades IV and V). The Army sample was specially built up to be representative. In each investigation the first tests were applied at several different Primary Training Centres or Reception Depots by different testers. Had the tests been given twice by the same testers at the same place, the coefficients might well have been higher. It will be seen that the paper and pencil tests yield fairly satisfactory reliabilities, except for Bennett Mechanical among women. The practical-mechanical tests (26 and 29) and Morse

TABLE 1

Reliability Coefficients

No. of testees.	NAVY 500	ARMY 500	ATS 1,000
Interval between test and retest	6–8 mths.	6–8 wks.	4 wks.
1. Matrix	.789	.883	.866
3. Abstraction	.804		
4. Bennett	.786	.852	.707
5. Arithmetic	.893		
6. Squares	.815	.847	.878
T2	.907		
9. Arithmetic		.954	
10. Verbal		.972	.963
11. Instructions		.919	.932
12. Agility		.581	
13. Arithmetic			.886
14. Spelling			.912
26. Assembly		.759	
27. Morse Aptitude		.727	
28. Auditory Acuity		.361	
29. 'Mec' test			.766

Aptitude are somewhat low, and the Agility and Auditory Acuity tests definitely inadequate, in reliability.

Split-half reliability technique was scarcely ever employed, being inapplicable to timed tests (*16*). The Kuder-Richardson Formula ✻ 20 was generally used in the development of new tests, in preference to ✻ 21 (*5*).

FACTOR ANALYSIS

Some sixty factor analyses were carried out, the mean number of tests being close to 11 and the mean size of population 300. The main uses were:

a) to study the abilities measured by the standard tests and their organisation in different populations;

b) to analyse the content of new tests in terms of factors defined by established ones;

c) to simplify questionnaires or rating scales on interests and personality traits by factorial item-analysis;

d) to explore unfamiliar abilities such as Radar operating, Anti-Aircraft work, athletic, scientific, etc., and in particular the structure of mechanical ability;

e) to analyse follow-up or validatory criteria, in order to show whether several sets of marks or assessments could reasonably be regarded as measuring a single general type of proficiency, or two or more relatively distinct types.

Burt's simple summation or Thurstone's centroid method was always applied as a first step, in order to indicate what statistically significant general and bipolar factors were present. But some form of general + group factor analysis was generally preferred to rotation of axes in eliminating negative loadings (*22*). The outstanding finding was the prominence of the general factor in representative adult populations. Although most if not all Admiralty and War Office psychologists began their work with a somewhat dubious or suspicious attitude toward Spearman's views, the trend of our results pointed inescapably to a g + group factor theory as preferable to 'simple structure.' In seven typical analyses the g factor obtained $2\frac{1}{2}$ times the variance of all other factors combined, and the most representative study, whose results appear in Table 2, yielded a g covering 52.5 per cent of variance, spatial-mechanical group factor 8.7 per cent, educational and verbal group factors 15.3 per cent. It is noteworthy that American naval psychologists also, in factorising the test scores of a heterogeneous Navy population concluded in favor of a general factor with a variance of over 30 per cent, and mechanical, spatial and educational group factors (*26*) But as soon as we took selected populations such as officers or mechanical trainees, correlations between some of the spatial–mechanical and verbal tests sunk to zero or slightly negative values; that is, the g which is common to these two main types of test tended to disappear, and independent factors akin to those which Thurstone obtains in selected college and high school populations provided a more satisfactory picture.

The second main finding was the ubiquity of the contrast between verbal, arithmetical and educational abilities on the one hand, and spatial, practical and mechanical abilities on the other hand. The same general pattern occurred among all types of male recruits, including African natives, and applied not merely to psychological tests but also to proficiency assessments. For example, ability at theory is set off from ability at Morse in naval, Army and ATS signallers and telegraphists; informational attainments contrast with typewriting and stenography among clerks, technical acquirements with personality qualities among officers, and so on. When suitable batteries of tests are analysed these "v:ed" and "k:m" types subdivide into innumerable more specialised group factors, although such subtypes do possess something in common over and above g. Thus in Table 2 the v:ed tests are best represented by a common educational factor and independent verbal and numerical sub-factors. A clerical group factor, and a subdivision of educational tests into primary vs. secondary school, or into rote vs. reasoning, types, were also often discovered. But in representative populations these sub-factors carried very low variance, whereas the v:ed factor was so prominent in all tests and jobs, that the vocational psychologist was generally able to make very successful predictions of performance in any kind of theory or bookwork training by means of mathematical and verbal tests.

In contrast the k:m pole is so heterogeneous and amorphous that it would seem to be not so much a positive practical ability as a complex of those abilities which are not linguistic and not usually affected by schooling. Not only mechanical-comprehension, mechanical-information and assembly tests, but spatial judgment tests, performance tests (e.g Kohs Block), some non-verbal g tests (e.g. Matrix), physical tests and manual dexterity tests all have something in common, beyond g, but readily break down into largely independent sub-types. The practical group factors in proficiency assessments are also relatively independent, hence vocational predictions are much less accurate in this field. An experiment in which the same tests were applied to groups of recruits at different stages of training showed that the structure of mechanical ability alters markedly with training. The Bennett test, for example, appears to test mechanical comprehension in beginners, but to become an educational

TABLE 2

Factorial Analysis of Group Tests in a Representative Army Population of 1,000 Recruits

	UNROTATED SIMPLE SUMMATION ANALYSIS				GROUP FACTOR ANALYSIS					COMMUNALITIES		
										Summation		Group Factor
	I	II	III	IV	g	k:m	ed.	v	n	Est.	Obt.	
1. Matrix	.77	+.23	+.10	−.16	.79	.17				.675	.682	.654
Dominoes (non-verbal g test)	.80	+.09	+.19	−.12	.87					.695	.697	.752
Group Test 70 Pt. I (ditto)	.74	+.16	+.03	−.08	.78	.13				.580	.577	.621
6. Squares	.63	+.35	−.00	+.01	.59	.44				.525	.523	.541
26. Assembly	.37	+.54	−.15	+.28	.24	.89				.515	.523	.850
4. Bennett	.69	+.33	−.17	+.07	.66	.31				.625	.617	.540
10. Verbal	.88	−.24	−.26	−.14	.79		.29	.45		.920	.919	.904
Dictation Test	.79	−.42	−.25	−.11	.62		.54	.48		.880	.876	.896
14. ATS Spelling	.81	−.32	−.20	−.11	.68		.41	.43		.800	.799	.818
11. Instructions	.89	−.06	+.11	−.15	.87		.23	.09		.820	.820	.819
9. Arith. Pt. I	.84	−.29	+.22	+.23	.72		.49		.39	.885	.889	.914
Arith. Pt. II	.86	−.16	+.12	+.13	.80		.38		.16	.800	.797	.815
13. ATS Arith.	.84	−.21	+.26	+.14	.77		.36		.32	.845	.840	.817
Variance per cent					52.5	8.7	8.4	6.9			73.5	76.5

attainment test among highly trained artificers. In another study of 27 sets of marks objectively awarded to Electrical Mechanics during their six months workshop training, it was concluded that, while a general ability at all mechanical jobs does exist, distinct from g, it is of small variance, and group factors specific to the particular type of operation (fitting, turning, milling, etc.) are more prominent. Each test job, occupying the trainees several days, may be aptly compared to a single mathematical test item, in reliability and in overlapping with other jobs or items. Hence a very extensive sampling of jobs over months may be needed to yield a reliable criterion of mechanical ability.

Owing to restrictions in the application of specialised tests, little data was collected on factors other than g, v:ed and k:m. A prominent physical factor was, however, found among athletic performances, age and medical category (partially overlapping with k:m). Among nine sensory-motor tests for the selection of anti-aircraft personnel, specificity was so great that common factors only accounted for 12 per cent of variance, g for 4 per cent, and the sensory-motor factors showed no relation to job proficiency. Trials of manual dexterity tests among mechanics gave similar results. Two entirely different efficiency rating questionnaires, employed in the Army and the ATS, yielded closely parallel common factors which were identified as:

1) keenness, smartness, conformity to discipline
2) social qualities
3) stability and thoroughness
4) ability at the job.

An analysis of 39 items in a biographical questionnaire, applied to one thousand naval recruits, gave:

1) a general cultural level factor
2) tendency to fill in many or few items—an additional general factor
3) mechanical interests and experience group factor
4) athletic interests group factor
5) domestic interests group factor
6) social interests group factor.

Over half the variance, however, of the average item was found to consist of specificity and unreliability.

A defect of such analyses is that the correlations were usually tetrachorics. Recently Slater has developed a technique for factorisation of chi-squareds, which should be more accurate.

VALIDATION

It is the boast of British vocational psychologists that they know more about the validity of their tests or other selection techniques than do doctors or teachers or any of the innumerable organisations which conduct scholastic, professional or trade examinations. During four years in the Navy, for example, there were 76 follow-up investigations, covering over 31,000 recruits, in which some criterion of proficiency was correlated usually with six or more selection tests, often with other data such as source or mode of entry, age, education and civilian occupation, sometimes also with numerous items such as interests or leadership experience, taken from the recruits' biographical questionnaires. These studies, the naval branches concerned, and numbers involved are shown in Table 3. The median size of sample is 300. In all of these the tests were given, or other data collected, on entry and the recruits' success or failure traced later, usually at the end of training. Validatory trials of new tests are not included.

Researches in the Army, while equally numerous, were more scattered, so that a similar complete list is not available. Soon after the introduction of regular selection procedure, 2,500 recruits in representative jobs were followed up. Thereafter many investigations were made of jobs where specific information was needed, e.g. in order to establish appropriate test standards. In the main ATS follow-up, some 6,000 auxiliaries were studied in the 27 commonest jobs, the median size of sample being 106.

It is obviously impossible to summarise all these data. An account has been given elsewhere of the abnormal distributions and the correlation techniques applied to them, the unreliability of the criteria of efficiency, methods of dealing with squad or class variations, the effects of selectivity and the difficulties in using multiple correlation and correction for multivariate selectivity (*22*). The value of a single composite test score, namely T2, is well illustrated by Table 4, which shows the 90th, 50th and 10th percentile scores for men employed in 36 representative naval branches.[4] Clearly there is excellent differentiation between the more and less

[4] Almost all of these figures were obtained from groups of conscripts in 1943. Standards have often changed since then and are very different in the permanent Navy.

highly skilled jobs. Table 5 shows the 90th, 50th and 10th percentile raw validity coefficients for the most frequently used tests in all naval investigations, and Table 6 the corresponding figures in ATS investigations corrected for selectivity (the uncorrected multiple r's in the two Services are almost identical in median and range).

TABLE 3

Follow-up Investigations in the Royal Navy

NAVAL BRANCHES	SIZE OF SAMPLE STUDIED	NO. OF STUDIES
Third Class Gunnery Rates	3,000+	1
Radar Operators	1,200+	1
Higher Gunnery Rates, Ordinary Seamen and Stokers	1,000+	3
Artificer Apprentices, Radio Mechanics, University Naval Divisions, Wiremen (Landing Craft)	800+	4
Air Mechanics, Motor Mechanics, Ordinary Seamen, RNVR Officers, Wiremen (Electrical)	600+	5
Air Artificers, Air Fitter Candidates, Coders, Electrical Mechanics, Engine Room Mechanics, Leading Seamen, Ordinary Seamen, Radar Operators, RNVR Officers, Safety Equipment Ratings, Seamen Torpedomen, Supply Assistants	400+	14
Air Mechanics, Asdic Operators, Cinema Projectionists, Diesel Stokers, Leading Stokers, Ordinary Seamen, Ordinary Telegraphists, Radio Mechanics, Stores Assistants, Wiremen (Landing Craft)	300+	10
Air Fitters, Asdic Operators, Electrical Artificers, Electrical Mechanics, Engine Room Mechanics (Motor Vehicle), Ordinary Telegraphists, Ordnance Mechanics, Radar Operators, Radio Mechanics, Wiremen (Electrical), Writers	200+	13
Asdic Operators, Coastal Forces Ratings, Cooks, Electrical Mechanics, Fleet Air Arm Pilots, Higher Asdic Operators, Instructors, Ordinary Signalmen, Photographers, Stewards, Telegraphist Air Gunners, WRNS Personnel Selection Staff	150+	14
Electrical Mechanics, Engine Room Mechanics, Mechanicians, Radar Operators	100+	5
Fleet Air Arm Observers, Radio Mechanics, Wiremen (Landing Craft)	50+	3
Electrical Artificers, Leading Torpedomen, Wiremen (Minesweepers)	<50	3
		76

The general level of validity of these group tests is higher than might have been anticipated from pre-war experience, though obviously too low for accurate selection in the absence of other information. The highest coefficients tend to occur with jobs involving lengthy training, including a fair amount of theoretical work, when the final assessment of proficiency is based on thorough examinations, and when there is no psychological selection scheme already in operation. Still higher ones would doubtless have been found had the Services made any use of objective attainment tests. The lowest coefficients occur with jobs where the work is highly specialised (such as Radio Mechanics), or where previous trade experience is of paramount importance, also in jobs (such as Seaman) where assessments of efficiency are based more on personality qualities, e.g. dependability, than on any definite skills or knowledge.

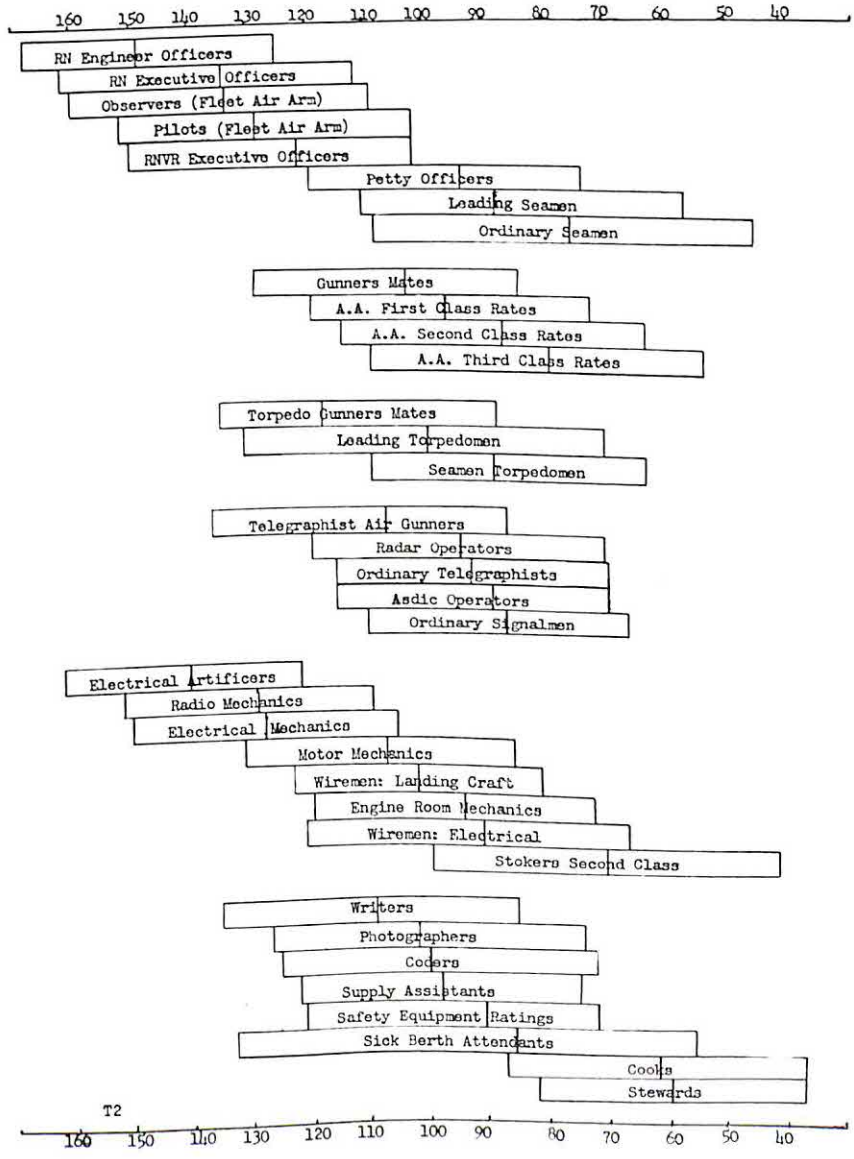
Since almost all the samples followed up had been selected by psychological procedures, the results are inevitably distorted by selectivity. Moreover statistical corrections for such selectivity are inadequate, since it does not merely involve reductions in the variance of test scores. Often, for example, PSOs might allocate to a certain branch men with low test scores but with compensating qualities of keenness or relevant experience, and when these men did well they reduced the corrected correlations between the test and the criterion. In some branches, successive validatory investigations gave poorer results as selection became more efficient. Table 7 illustrates this trend in a new mechanics branch of the Navy. The first 300 men sent for training were almost unselected, since little was known about the job requirements, and the validity coefficients of all tests are remarkably high. Among the next 300, more information was available to the PSOs; also the content of the training course altered. As the Training School got used to the better quality of well-selected trainees, the course was stiffened, and the validity coefficients among the third group of 500 are quite low.

In general the most striking result of follow-up investigations was the uniformity of the relative validities of different tests in all jobs. Table 8 shows, indeed, that the mechanical-spatial tests

were relatively less useful than verbal-numerical ones in Clerical and Communications jobs, but also that they were just about as useful among officers, seamen and gunnery ratings as among mechanics. In some branches, all the tests might achieve high practical efficiency, but was not outstandingly successful in mechanical branches, where the trainees possessed very diverse trade experience. Just the same was found in the Army with the Bennett and with the still more mechanical As-

TABLE 4

Ninetieth, Fiftieth and Tenth Percentile T2 Scores of Men Employed in Different Branches of the Navy



coefficients, in other branches all low, but almost always the Mathematics test obtained the highest relative validity, and the Spatial test the lowest. Often in fact the Mathematics test got better coefficients than T2—the sum of four tests. The Bennett Mechanical test gave useful predictions of sembly test. Although the Bennett is not generally appropriate for women (cf. Tables 1 and 6) yet, together with a Meccano Assembly test, it actually showed greater differential value in the ATS than in the men's Services, presumably owing to the smaller influence among women of previous ex-

perience. The conclusion followed, then, that almost all branches wanted the same type of man, one with good education (especially in mathematics) as well as good intelligence. Thus selection became largely a matter of apportioning the available supplies of high quality men among the branches according to their needs; differentiation between jobs was based more on interests and interview judgments than on tests.

TABLE 5

Raw Validity Coefficients of Standard Naval Selection Tests

TEST	1 MATRIX	3 SHIPLEY	4 BENNETT	5 MATHS.	6 SQUARES	T2	MULTIPLE r (UNCORR.)
90%ile	.45	.49	.44	.57	.38	.57	.70
50%ile	.28	.30	.28	.35	.22	.40	.47
10%ile	.10	.11	.13	.17	.05	.20	.32

TABLE 6

Validity Coefficients of Standard ATS Selection Tests Corrected for Multivariate Selectivity

TEST	1 MATRIX	4 BENNETT	13 ARITH.	6 SQUARES	11 CLERICAL	MULTIPLE r	
						Uncorr.	Corr.
90%ile	.65	.41	.69	.51	.66	.69	.84
50%ile	.49	.30	.51	.40	.56	.47	.65
10%ile	.27	.19	.26	.20	.35	.35	.50

TABLE 7

Correlations Between Tests and Proficiency Among 1,100 Mechanics

TEST	FIRST 300	NEXT 300	NEXT 500
1. Matrix	.623	.399	.255
3. Abstraction	.465	.568	.294
4. Bennett	.527	.352	.329
5a. Arithmetic	.553	.379	.164
5b. Mathematics	.638	.426	.369
6. Squares	.377	.282	.276
T2	.685	.532	.375

In the Army the Clerical or Instructions test (whose only difference from an ordinary clerical test battery is that all the operations have to be done in rapid rotation instead of in separate "slabs," hence its instructions are rather elaborate) vied with Arithmetic for top place in most branches, followed by the Verbal test and Bennett. Clerical was outstanding, for example, among drivers and in officer selection. In the ATS the same test did best, followed by Arithmetic and Spelling.

Several factors may be involved in this result. First we have seen that tests like Clerical and Arithmetic are more reliable than, and have as high g-content as, say, Matrix. Secondly most of the validatory criteria consisted of training results rather than assessments of operational efficiency, and tests with educational content might be expected to be the most successful in selecting men who could be trained rapidly. Numerous attempts were made to carry out operational follow-up, none entirely adequate. But the following experiments are worth citing.

A correlation of .624 between T2 and assessments of efficiency during fighting in Italy was obtained among 200 Royal Marine signallers, but the group tests were, in this instance, not applied until after the unit returned to Britain. Table 9 shows the numbers of good and less good men in each T2 Grade.

For the four component tests the coefficients were all between .46 and .49. Thus Arithmetic appears to retain good predictive value, but the spatial test improves, when compared with an operational criterion.

Some seven thousand men in all Arms of the British Liberation Army were assessed for efficiency at the conclusion of hostilities in Germany, and the test scores which certain groups had obtained on recruitment were traced. Among 260 infantry, the Arithmetic test gave a correlation of .263, and all other tests smaller coefficients. While this figure is low it compares favorably with the correlation of .297 between the operational assessments and efficiency gradings given shortly before the invasion.

In the ATS over 600 trainees for Anti-Aircraft duties were followed up, and later some 1,300 were assessed for efficiency after serving two or more years. The mean (corrected) validity coefficients are shown in Table 10. Most of the tests, and multiple r, drop considerably in validity at the operational stage. But Spelling achieves a much higher coefficient, and the Clerical test is relatively more valid than at the training stage.

Another approach was to contrast the test scores of men promoted to higher naval rates with lower

rates, on the assumption that the Navy would select the most efficient rather than the most educable for promotion. Correlation ratios for four tests and for T2 are shown in Table 11 among Gunnery and Torpedo rates. Though the absolute coefficients are higher in the Torpedo branch, the relative order of validities is identical, and the Mathematics test far surpasses the rest, including T2.

All the above evidence would seem to show, then, that the high validity of the v:ed tests is not primarily due to the use of training results as validatory criteria. A third consideration is that, as already mentioned, shortage of personnel, time and materials prohibited the use of specialised tests which might have had greater differential value. Actually many such tests were tried out and were found to add so little to the multiple r's obtained with the standard group tests alone, that they were not pursued.

correlations, included No. 22 Reading Comprehension (naval officers, writers and stores assistants), No. 25d Doppler effect—a phonograph record based on Asdic sounds (Asdic operators), a scale and graph reading test (Radar operators), No. 8 Electrical Information (radio and electrical mechanics and wiremen), and occupational tests such as Nos. 29 and 31.

As none of these reasons appears adequate, the writer is inclined to attribute the success of such tests as Mathematics and Clerical first to the extreme heterogeneity of recruits in g and v:ed (as shown by factor analysis), and secondly to these tests involving certain personality qualities such as stability and persistence, in addition to cognitive abilities.

A few illustrations only will be given of the validation of selection techniques other than tests.

TABLE 8

Mean Validity Coefficients of Selection Tests in Clerical, Mechanical, and Other Naval Branches

NAVAL BRANCHES	NO. OF INVESTIGATIONS	1 MATRIX	3 SHIPLEY	4 BENNETT	5 ARITH.	6 SQUARES	T2
Writers, Supply, Signalmen, Telegraphists	5	.37	.38	.19	.44	.18	.42
Elec. Mechanics, Air Fitters & Mechanics, Engine Room & Motor Mechanics, Artificers, Stokers	18	.30	.27	.33	.38	.26	.41
Seamen, Officers, Gunnery Ratings, Leading Seamen	11	.31	.36	.33	.37	.24	.42

This occurred with the battery of sensory-motor tests for Anti-Aircraft personnel, with the old Morse Aptitude test for signallers, with Chleuse-

Questionnaire information, particularly data about work record and experience of leadership, were proved significant in many jobs. Thus among 274

TABLE 9

T2 SGs of Signallers Obtaining High or Low Assessments for Operational Efficiency

ASSESSMENT	T2 GRADES				TOTAL
	A	B	C	D or E	
Competent or better	43	66	46	4	159
Passable	1	7	12	2	22
Below Standard	1	1	10	7	19
	45	74	68	13	200

TABLE 10

Mean Validities of ATS Selection Tests in Several Anti-Aircraft Jobs at Different Stages

TEST	1 MATRIX	4 BENNETT	13 ARITH.	6 SQUARES	11 CLERICAL	14 SPELLING	MULTIPLE r
Training Stage	.47	.24	.53	.11	.42	.06	.65
Operational.	.35	.21	.30	.25	.37	.31	.43

bairgue's (*3*) discrimination reaction time test for drivers, and others. The most useful supplementary tests, which did produce significant rises in multiple

Radio Mechanics, the combined tests correlated only .33 with final training results, but the addition of such items as attendance at evening classes, examinations passed in Mathematics and Physics, and

interests in metalwork, house repairs, radio and electrical repairs, and photography, raised the (uncorrected) multiple r to .56. So much reliance was placed on the interpretation by PSOs and psychologists of questionnaire and interview information that the validity of their judgments received considerable attention. Among 460 Safety Equipment ratings, an experienced PSO graded each man from his questionnaire only, not knowing his test scores, and achieved a correlation of .55 with training results, whereas T2 gave a correlation of only .39. But it was also found that PSOs varied rather widely in ability. Thus when 1,631 Radio and Electrical Mechanics and Wiremen who had been selected by 13 different PSOs were followed up, the failure rates on course of men selected by different PSOs ranged from 18 per cent to 37 per cent, the median being 24 per cent. Similar variations were traced among Army PSOs both in the proportions of suitable recruits which they selected as potential officers, and in the failure rates of their selectees at W. O. Selection Boards.

TABLE 11

Correlation Ratios for Naval Selection Tests

NAVAL RATES	NOS.	3 SHIPLEY	4 BENNETT	5 MATHS.	6 SQUARES	T2
Four A.A. Gunnery rates	1,336	.14	.27	.38	.15	.31
Three Torpedo rates	264	.31	.45	.58	.39	.53

A psychologist's interview gradings of 503 naval officer candidates were compared with the gradings of an Admiralty Selection Board. When the selectees were followed up to the end of their training, it was found that 71.0 per cent of those given favorable grades by the psychologist had passed, and 61.4 per cent of those favorably graded by the Board. It should be noted that both the psychologist and the Board knew the candidates' T2's, but the psychologist did not see the reports, prepared for the Board, on the candidates' previous record in the Navy. Had selection been based on a certain T2 pass-mark alone, 66.3 per cent of those above this mark would have successfully completed their training.

That Wren Petty Officers, interviewing at Recruiting Centres, can pick out a large proportion of suspect cases was shown in an experiment where four Wrens interviewed 147 actual psychiatric cases (in or out patients) mixed with 175 controls. From perusal of the men's questionnaires and from a few simple questions about 'nerves,' dieting, etc., they picked 54 per cent of the psychiatric cases and 16 per cent of the controls as suspect. Moreover it was discovered later that, of the 16 per cent controls, most of whom were seen by a psychiatrist, over half did actually possess some considerable degree of abnormality.

The value of selection procedure as a whole was best shown in the Fleet Air Arm, where over 16,000 mechanics and fitters were followed up. Over 6,000 were selected by standard methods before psychologists played any part, and their overall failure rate on course was 14.7 per cent. When selection was undertaken by PSOs, working under a psychologist, not only did the failure rate for 10,000 men drop to 4.7 per cent (cf. Table 12), but also they extracted a much larger proportion of trainees from the available recruits, without denuding other mechanical branches which were likewise making large demands at that time.

TABLE 12

Failure Rates of Fleet Air Arm Mechanics and Fitters Selected by Different Methods

CATEGORY		OLD METHOD		PSYCHOLOGICAL METHOD	
		No. of men put on course	% failed	No. of men put on course	% failed
Air Mechanics	Airframes	1,333	16.8	2,234	6.9
	Engines	1,219	21.2	2,218	5.6
	Ordnance	902	7.3	1,596	0.6
	Electrical	832	16.1	1,969	4.9
Air Fitters	Airframes	953	10.1	723	4.3
	Engines	890	15.6	743	5.4
	Ordnance	130	13.1	199	2.0
	Electrical	271	9.2	326	1.8
Total		6,530	14.7	10,008	4.7

In the ATS it was possible to compare several groups of auxiliaries selected by PSOs with others, who were trained simultaneously but were selected by other methods, with the results shown in Table 13.

Several workers were continuously engaged on the follow-up of Army officers, and made important contributions to the technique of collecting reliable assessments both at OCTU (the Training Units) and in the field. Full control over the selection methods and grading standards of the different Selection Boards was never satisfactorily established, with the result that the reliability of selection was inadequate. Thus in an experiment where 116 candidates each went before two Boards, the average agreement between pairs of Boards was represented by a tetrachoric correlation of .67. Nevertheless these Boards were shown to be significantly more successful than the traditional Boards where selection was based only on testimonials and interview. Some 1,200 cadets selected contemporaneously by old or new Boards were followed up at OCTU, and selectees from 7 out of 8 new Boards obtained better

TABLE 13

Failure Rates of ATS Trainees Selected by Different Methods

CATEGORY	NO. SELECTED BY OLD METHODS	% FAILED	NO. SELECTED BY PSOS	% FAILED
Drivers	124	30	1,004	14
Clerks	128	11	592	4
Special Operators	420	60	130	7
Operators Wireless and Line	217	7	187	0.5

results than those from five old Boards, in almost all Arms of the Service (cf. Table 14). In 1945, assessments of over 500 officers in Infantry and Royal Artillery were obtained from Commanding Officers just before the crossing of the Rhine, and slight but significant differences in efficiency were found between those who had been passed as A's or B's, C's and D's at their Selection Boards. Considering the disturbing effects of age, length of commissioning and other factors, and the extreme selectivity of the sample (less than 3 per cent of recruits in 1943–45 became officers), the result is fairly satisfactory.

MISCELLANEOUS RESEARCHES

Age, Occupational and Regional Differences in Intelligence. The Matrix scores of 90,000 naval recruits who fell within a dozen broad occupational groups were tabulated for all Recruiting Areas in the country. An almost linear regression of age on scores was found, corresponding to a correlation ratio of .244. Age contributed 5.9 per cent, Occupation 13.4 per cent and Area 1.4 per cent to total variance. The analysis of interactions of these factors is not yet complete, but it has been found that the rate of decline with age is significantly greater in the lower occupational groups. In Table 15 which shows the mean sigma scores for occupations and areas, the age distribution is held constant; and in the means for different age groups, occupation and area distributions are held constant.

Distribution of Colour Defect. The results of the naval colour vision test for 123,000 recruits tested in 1942 showed variations between different *large* Recruiting Centres (those testing over 1,000 cases) of 3.8 per cent to 10.4 per cent in proportions of colour defectives. Analyses of variance indicated that differences due to the tester, or method of giving the test, were of doubtful significance, but that regional differences were highly significant. When the Centres were grouped into nine major areas (*24*), percentages of defectives ranged from 5 or 6 in the North and East to 8 or 9 in the South and West, and there was good correspondence with the incidence of dark eye and hair colour in these areas. This finding may be due in part to a genetic linkage, or, as Burt has shown (*2*), to a direct effect of pigmentation on colour vision. In a supplementary investigation, data on the present-day distribution of hair and eye colour of recruits are being collected, with the aid of a new scale of plastic eyes.

TABLE 14

Training Results of Army Officer Cadets Selected by Traditional and by Psychological Methods

BOARDS	NO. SELECTED	ABOVE AVERAGE	OCTU GRADINGS, AVERAGE	BELOW AVERAGE AND FAIL
Old	491	22.1%	41.3%	36.6%
New	721	34.5	40.3	25.2

Service Differences. Though entirely trustworthy comparisons are not possible, there is strong evidence that the Royal Air Force acquired the greatest, and the Army the smallest, proportions of high-grade recruits. Percentage distributions on the Matrix test (Army norms) for over 100,000 men both in the Army and the Navy, recruited during 1942, are shown in Table 16. Conversion tables were also

built up between the standard Air Force and naval test batteries, and approximate T2 percentiles are given in Table 17.

Value of Pre-Service Training. Some three thousand members of the Air Training Corps, Sea Cadet Corps, Army Cadet Force and other pre-service organisations were followed up, both in the Navy and the Army, together with large control groups of non-members. While these recruits were shown to yield large proportions of officers or of men suitable for many kinds of specialist jobs, this was attributable chiefly to their superior education and intelligence. Thus in the Army, variance in recommendations as potential officers was accounted for as shown in Table 18. All of these values are statistically significant. In the Navy, ex-Scouts were found to do at least as well as ex-members of the Air Training and Sea Cadet Corps. A smaller experiment on Army Cadets who had worked for and obtained the proficiency Certificate A showed however that such men were much superior to controls (with no pre-service experience) in their first 3 to 4 months of training, but much less superior when judged later as officer candidates by W. O. Selection Boards. Correlations between these criteria and possession of Certificate A and the standard test battery are given in Table 19.

Effects of Attendance at Physical Development Centres and Basic Education Courses. Some 250 Army recruits with very poor physique who took a 2 months course at a Physical Development Centre were tested before and after; (results on the Matrix test only were available for 648 cases). Expected retest rises were determined from the experiment on the reliability of selection tests. Obtained retest

TABLE 15

Mean Sigma Scores of Occupational, Age and Area Groups on Matrix Test

OCCUPATION	SIGMA SCORE	AGE	SIGMA SCORE	AREA	SIGMA SCORE
		yrs.			
Clerks	+.71	16–17	+.16	London	+.14
Electrical Workers	+.34	18–19	+.10	Manchester	+.11
Precision Workers	+.17	20–24	+.01	Derby	+.02
Woodworkers	+.12	25–29	−.19	Southampton	−.01
Sheet Metal Workers	+.03	30–34	−.30	Newcastle	−.04
Machine Operators	−.08	35–39	−.46	Liverpool	−.06
Retail Tradesmen	−.12	40+	−.70	Birmingham	−.09
Builders	−.14			Bristol	−.16
Mates (all types)	−.24			Glasgow	−.18
Drivers	−.31				
Farm Workers	−.46				
Labourers	−.52				

TABLE 16

Percentage Matrix Test Distributions for Army and Navy Recruits (1942)

SG	ARMY	NAVY
I	12.3	14.5
II	23.6	27.9
III	42.5	44.1
IV	16.2	12.3
V	5.4	1.2

TABLE 17

Approximate T2 Percentile Scores for Air Force, Navy and Army (1942 and 1945)

	DATE	PERCENTILE		
		90th	50th	10th
RAF Air Crew	1942	141	114	85
RAF Ground Staff	1942	116	81	54
Naval Recruits	1942	108	75	46
Naval Recruits	1945	132	100	68
Army Recruits	1942	100	72	36
Army Recruits	1945	112	81	48

rises gave the F-ratios shown in Table 20, when subjected to analysis of variance.

Attached to PDCs are picked educational Serjeants who organise numerous 'brains trust' periods, spelling bees and the like. This may account for the big rise on the Verbal test. The rise on Matrix may indicate increased mental as well as physical alertness, rather than an improvement in basic intelligence. There is no appreciable increase on other mental tests. The increase in Agility would be expected and conforms with an improvement in medical category, height and weight.

A similar experiment on illiterate recruits sent to a 6 weeks Basic Education Course showed no change in Matrix and Arithmetic scores beyond the usual retest rises. In a Reading Comprehension Test, exactly parallel forms of which had been prepared, the improvement among men sent by their own Units was generally small and irregular. But among those selected by PSOs and psychiatrists as likely to benefit from the courses, the average improvement was much larger and highly significant.

TABLE 18

Analysis of Variance in Potential Officer Recommendations Attributable to Several Factors

	SUM OF SQUARES
	per cent
Differences in Educational Standard	19.9
Additional variance due to membership of a pre-service organisation	0.9
Additional variance between different organisations	3.1

TABLE 19

Relative Predictive Value of Pre-Service Training and of Selection Tests

	PRIMARY TRAINING RESULTS	W.O. SELECTION BOARD RESULTS
Possession of Certificate A vs. no pre-service experience	.47	.24
Selection test battery	.38	.33

Effects of Menstruation on Test Performance. The day within the menstrual cycle on which the standard selection tests were taken for a second time was ascertained by Medical Officers among 1,335 ATS recruits, all of whom claimed a normal or 28-day cycle. They were classified into four 'phase' groups:

(i) From 4 days before to 4 days after the onset of menstruation
(ii) From 5th to 10th day
(iii) Ovulation phase—11th to 18th day
(iv) From 19th to 24th day

At the original testing, the menstrual days were unknown and could be assumed to be randomly distributed. Comparisons of test and retest Matrix scores yielded the analysis of variance shown in Table 21.

There appear to be slight differences between observed and expected retest scores on some days, but they are irregular and are not associated with particular menstrual phases. Phase as such has no demonstrable effect. A similar analysis of the Clerical test gave negative results, and on other selection tests phase differences were even smaller.

TABLE 20

Results of Analyses of Variance in Retest Rises Due to Attendance at Physical Development Centres

TEST	F-RATIO	P
10. Verbal	67.65	$<.001$
1. Matrix	47.74	$<.001$
12. Agility	32.37	$<.001$
26. Assembly	5.10	$<.05 > .01$
9. Arithmetic	2.52	$>.05$
4. Bennett	0.71	$>.05$

In a further experiment, 1,000 auxiliaries were asked to state both at test and retest if they felt unable to do themselves justice and if so on what grounds. The scores of 3.45 per cent who claimed menstrual unfitness on either occasion showed no significant differences from the remainder. Those suffering from colds showed a slight, but not significant, drop in scores. A strong association was noted between incidence of menstrual pain and type of ATS or civilian employment. It was significantly higher among women in strenuous or outdoor, than in sedentary and indoor, jobs.

Value of Film and Film-strip in Instruction. Seven groups of recruits, each including over a hundred men in 3 or 4 classes, were instructed for three periods in a branch of seamanship by various methods such as oral and practical instruction, film and/or film-strip, and were later given an ob-

jective written examination without warning. Periods between instruction and examination and instructors with different degrees of competence were systematically distributed through all groups. Analysis of covariance (which held constant class differences in intelligence) showed significant improvements, amounting to about 8 per cent in marks, due to the use of the film-strip, the addition of the film, and good vs. poor instructors. The film was the most successful in view of the much shorter time that it takes. It had more effect on questions designed to test comprehension than on questions demanding memory of details. The latter, but not the former, type of questions was significantly affected by a longer period between instruction and examination. Other uncontrolled factors such as the morale of the classes and amount of private study or coaching, which were measured by the residual variance between groups and classes, were shown to have only a small influence (*23*).

Other Training Investigations. A memorandum on methods of Army instruction was drawn up by Valentine in 1942 on the basis of replies to a questionnaire sent to past students in the Army (*19*, *20*). The main defects mentioned were:

1) Mechanical, parrot-like teaching
2) Unnecessary enumeration of parts of weapons at early stages
3) Use of technical vocabulary and unfamiliar words
4) Too much crowding of instruction; bad organisation of courses
5) Lack of "learning by doing," lack of appeal to interest
6) Lack of visual aids and of elementary textbooks
7) Use of sarcasm or abuse by instructors, unsympathetic handling
8) Inadequate selection of NCOs suited to instructing; lack of training in instructional technique
9) No homogeneous grouping of classes in ability
10) Haphazard and subjective examination techniques

Several reforms arose out of this enquiry and from the investigations of instructional techniques carried out by Stephenson, who was Consultant Psychologist to the Army Medical Service. Another major field of work was the application of time and motion study to gun drills and to the design of equipment (*18*).

In the Navy, detailed investigations were made into selection and training of Asdic operators, Radar operators and Radio Mechanics, Telegraphist Air Gunners (Fleet Air Arm), Torpedo ratings and Electrical Mechanics, and, in the Engineering Branch, Artificer Apprentices, Mechanicians and Leading Stokers. An elementary manual of psychological principles of instruction was published (*21*). A critical analysis of methods of learning to receive and send Morse Code, based largely on recent American researches, was also prepared.

In these specialist courses, the ability of instructors and lecturers was much less open to criticism, and attention was mainly concentrated on:

1) Success of trainees obtained from various sources, with varying previous experience and background
2) Propaganda for attracting suitable candidates
3) Organisation of the syllabus; working hours, distribution of periods, size of classes, etc.
4) Effects of conditions of work on the morale of trainees

TABLE 21

Analysis of Variance Due to Menstrual Phases

	SUMS OF SQUARES	D.F.	MEAN SQUARE	F	P
	per cent				
Total variance on retesting	100.00	1,334			
Accounted for by regression of retest on test	62.3281	1			
Accounted for by differences between phases	.0660	3	.2626	1.27	$> .05$
Accounted for by differences between days in the same phase	1.0558	24	.5254	1.57	$< .05 > .01$

5) Functions of theoretical instruction, and its integration with practical training
6) Use of visual aids, including diagrams, charts, films, and demonstration models
7) Methods of examining and marking.

In conclusion, although the volume of experiments on training methods was not large, and the psychologists' recommendations may often have carried little weight at the time, yet a very large measure of goodwill was built up, and there is now a readiness to consult psychologists in the early stages of planning instruction or of producing training devices, which would have been unthinkable five years ago.

BIBLIOGRAPHY

1. BENNETT, E. AND SLATER, P. Some tests for the discrimination of neurotic from normal subjects. *Brit. J. med. Psychol.*, 1945, **20**, 271–282.
2. BURT, C. The relation between eye-colour and defective colour vision. *Eugen. Rev.*, 1946, **37**, 149–156.
3. CHLEUSEBAIRGUE, A. Industrial psychology in Spain. *Occup. Psychol.*, 1939, **13**, 33–41.
4. CRAIK, K. J. W. A new Cambridge unit of research in applied psychology. *Occup. Psychol.*, 1945, **19**, 15–19.
5. FERGUSON, G. A. *The Reliability of Mental Tests.* London: University of London Press, 1941.
6. GARFORTH, F. I. de la P. War Office Selection Boards. *Occup. Psychol.*, 1945, **19**, 97–108.
7. MERCER, E. O. Psychological methods of personnel selection in a women's Service. *Occup. Psychol.*, 1945 **19**, 180–200.
8. MISSELBROOK, B. D. The short personnel selection interview. *Occup. Psychol.*, 1946, **20**, 85–97.
9. MYERS, C. S. Selection of army personnel: Development of the D.S.P. *Lancet*, 1942, **243**, 591–592.
10. MYERS, C. S. The selection of Army Personnel. *Occup. Psychol.*, 1943, **17**, 1–5.
11. RAVEN, J. C. The R.E.C.I. series of perceptual tests: An experimental survey. *Brit. J. med. Psychol.*, 1939, **18**, 16–34.
12. RODGER, A. The use of tests in vocational guidance, *Occup. Psychol.*, 1939, **13**, 200–210.
13. RODGER, A. The work of the Admiralty psychologists. *Occup Psychol.*, 1945, **19**, 132–139.
14. SHIPLEY, W. C. A self-administering scale for measuring intellectual impairment and deterioration. *J. Psychol.*, 1940, **9**, 371–377.
15. STRAKER, D. Difficulties of psychological field research in a fighting Service. *Occup. Psychol.*, 1944, **18**, 133–141.
16. THOULESS, R. H. The effects of errors of measurement on correlation coefficients. *Brit. J. Psychol.*, 1939, **29** 383–403.
17. TUCK, G. N. The Army's use of psychology during the war. *Occup. Psychol.*, 1946, **20**, 113–118.
18. UNGERSON, B. Motion study applied to military problems. Paper read to Industrial Section, British Psychological Society, November 1945.
19. VALENTINE, C. W. *Principles of Army Instruction.* Aldershot: Gale and Polden, 1942.
20. VALENTINE, C. W. *The Human Factor in the Army.* Aldershot: Gale and Polden, 1943.
21. VERNON, P. E. *The Training and Teaching of Adult Workers.* London: University of London Press, 1942.
22. VERNON, P. E. Statistical methods in the selection of Navy and Army personnel. *J. roy. Statist. Soc.*, 1946, 109.
23. VERNON, P. E. An experiment on the use of film and filmstrip in the instruction of adults. *Brit. J. educ. Psychol.*, 1946, 16.
24. VERNON, P. E. AND STRAKER, A. Distribution of colour-blind men in Great Britain. *Nature, Lon.*, 1943, 152, 690.
25. WILSON, N. A. B. Interviewing candidates for technical appointments or training. *Occup. Psychol.*, 1945, **19**, 167–179.
26. *Psychological Test Construction and Research in the Bureau of Naval Personnel: Development of the Basic Test Battery for Enlisted Personnel.* Staff of the Test and Research Section, Training, Standards and Curriculum Division, Bureau of Naval Personnel. *Psychol. Bull.*, 1945, **42**, 561–571.
27. *The Army General Classification Test.* Staff, Personnel Research Section, Classification and Replacement Branch, The Adjutant General's Office. *Psychol. Bull.*, 1945, **42**, 760–768.

AN ANALYSIS OF DUTIES PERFORMED BY CLINICAL PSYCHOLOGISTS IN THE ARMY

MAX L. HUTT[1]
Teachers College, Columbia University

AND

EMMETTE O. MILTON
University of Tennessee

PSYCHOLOGISTS were first commissioned in the Army as clinical psychologists in October 1944. Almost three hundred were elevated directly from enlisted ranks wherein they had served in varying capacities in almost all branches of the service. Other psychologists, previously commissioned, were transferred to the new clinical psychology program. Since commissioning they have served primarily in General and Convalescent Hospitals, Consultation Services, Rehabilitation Centers, and Disciplinary Barracks. Although numerous publications of the War Department have outlined their functions and duties, it was felt that an actual survey of the functions performed by these officers would provide material not only of historical interest but also of value in planning the future education, training, and professional activities of civilian psychologists.

Accordingly, in April 1946 a questionniare was distributed by the Clinical Psychology Branch of the Surgeon Generals Office to psychologists *who were then on duty* in General and Convalescent Hospitals and Hospital Centers. The questionnaire was arranged in three schedules: identifying and military service data; analysis of job functions; experience with psychological tests, validation studies, therapeutic experience, and research programs. Each officer was requested to supply the necessary information, insofar as practicable, for each of five periods: Period I (Sept. 1–Dec. 1944), Period II (Jan.–Apr. 1945), Period III (May–Aug. 1945), Period IV (Sept.–Dec. 1945), Period V (Jan.–Apr. 1946). Replies were received from all of the fifty commissioned clinical psychologists on active duty on 1 May 1946 in the types of installations mentioned above. Some additional correspondence was necessary between the Clinical Psychology Branch and eight of the respondents in order to clarify some of the data or to correct statistical inaccuracies. Several selective factors were in operation and the conclusions reached herein show trends only.

Analysis of the assignments of these fifty officers for the past eighteen months reveals that as of 1 May 1946, forty-five of the psychologists were assigned to General and Convalescent Hospitals. The contrast with the types of assignments held by these same psychologists only one and a half years ago is striking. At that time (Period I) only twelve were assigned to General and Convalescent Hospitals. The remaining thirty-eight were distributed among Regional and Station Hospitals (five), Consultation Services (two), Induction Stations and Personnel Centers (five), other psychological assignments (nonmedical) (nineteen), and non-psychological assignments (seven).

It is obvious that there was a trend toward concentration of clinical psychologists in the large medical installations which became most active in Period III (summer of 1945). This is understandable in the light of two main factors: (1) neuropsychiatric casualties from combat areas were being concentrated in Zone of Interior installations during that period, and (2) the commissioning and training program for clinical psychologists resulted in a relatively sufficient supply of such officers by midsummer of 1945; they could consequently be assigned where their services were needed most.

It is interesting to observe that during Period IV (fall of 1945) there were no psychologists in non-

[1] Formerly, Chief, Clinical Psychology Branch, SGO.

psychological assignments (within the limits of this survey). Another interesting commentary is that only twelve of the fifty psychologists being studied had continuous assignments in General and Convalescent Hospitals for the entire period of this study. While frequent changes of assignment, not necessarily most conducive to stability of function and maturation in skill and responsibility, was the rule, it is evident that there was steady progress in securing appropriate professional assignments.

Table 1 shows the percentage of time devoted to various job functions during each of the five periods. It should be emphasized that these figures are based on estimates and are approximations only. In some cases, the supplied figures may have been influenced by the way in which psychologists envisioned their assignments. In other instances these estimations were affected by various memory factors and by the fact that most of the time work was conducted under pressure. Since, however, these were official questionnaires and were reviewed by Chiefs of Service and Commanding Officers they may be accepted as reliable for practical purposes.

TABLE 1

Percentage of time given to various job functions during each of five periods† from Sept. '44 to Apr. '46

JOB FUNCTION	PERIOD I % OF TIME	PERIOD II % OF TIME	PERIOD III % OF TIME	PERIOD IV % OF TIME	PERIOD V % OF TIME
7*. Administration & Supervision	17.4	16.4	18.3	17.1	17.5
8. Ind. Psychol. Examinations	30.8	35.2	28.9	28.9	34.9
9. Group Psychol. Examinations	2.4	2.2	1.6	2.4	0.3
10. Guidance & Therapy	12.4	21.4	23.5	29.6	24.4
11. Liaison Functions	3.5	4.6	7.7	8.3	6.5
12. Army Boards	1.4	1.3	2.4	2.4	2.6
13. Official Research	2.9	2.4	0.4	0.6	1.4
14. Case Histories	12.0	8.1	5.2	3.9	3.0
15. Misc. Professional Duties	10.6	3.8	6.8	4.7	4.1
16. Non-Professional Duties	6.6	4.6	5.2	2.1	5.2
Total	100.0	100.0	100.0	100.0	100.0

* The numbers preceding the job functions are the numbers assigned to these items in the schedules.

† For explanation of "Periods" see body of this report.

The data contained in Table 1 are largely self-explanatory, but a few of the important and outstanding trends may be emphasized and commented upon.

From an examination of Period V, it is apparent that psychologists distributed their time over a wide variety of functions. Chief among these functions was the administration and interpretation of individual psychological examinations. Analysis of later data showing the actual tests used and the material contained in the narrative statements indicates not only that this was the most important single contribution of clinical psychologists, but that this was a highly technical and specialized contribution to the functioning of the neuropsychiatric team.

The proper selection of batteries of psychological tests and their careful administration and interpretation for varied hospital populations constituted a vital service in both diagnosis and definitive treatment. This is a tremendous change from the time when psychologists were largely psychometrists interested primarily in intellectual evaluation (and thought by others to be capable only in that area). This trend is so important that further analysis and emphasis will be provided later in the paper.

Although group psychological tests were occasionally administered to hospital patients, they were rarely employed in the diagnostic evaluation of neuropsychiatric patients.

Guidance and Therapy constituted the second most important area in Period V. Detailed analysis of the data revealed that most of the time spent in this area was with individual therapy, the remainder of the time being invested in counseling and group psychotherapy. While this emphasis resulted in part from the desires of psychologists to participate in this type of work, in much larger measure it was the result of a tremendous patient load which could not be handled by neuropsychiatrists alone, and so involved clinical psychologists and psychiatric social workers as well as psychiatrists. Table 1 shows that psychologists were used increasingly to meet these emergency needs. The functions of re-education carried by psychologists with aphasic patients and with other physically handicapped patients (paraplegics and the deaf, for example) contributed to the relatively large amount of time given to guidance and therapy. In the past, there has been little or no emphasis upon this type of activity in our edu-

cational and training programs. The figures in this survey certainly suggest that considerably more attention needs to be directed toward this area.

It is interesting that only 3 per cent of total time was spent in obtaining case or social histories. Probably, the most important single factor accounting for this low figure was the successful attempt of the Army to assign social workers and psychiatric social workers to medical installations. Perhaps also it is the result of psychologists demonstrating their proficiency in other areas more closely related to their training. It is gratifying to note that these psychologists in Zone of Interior medical installations devoted only approximately 5.2 per cent of their time in 1946 to nonprofessional duties (Officer of the Day, Assistant Adjutant, Inspection teams, etc.). While it is known on the basis of many communications received in the Clinical Psychology Branch as well as of personal interviews that psychologists serving in overseas installations were frequently not utilized in a professional capacity, such is not the case with those reporting in this survey.

It should be emphasized that Table 1 includes the average percentages for the several items discussed. Individual variations, often marked, were noted in evaluating the original data sheets. Such variations suggest that to some extent psychologists functioned primarily in those areas in which they were most proficient.

An analysis was made of the tests employed by these clinical psychologists. The respondents in this survey personally administered individually 9,341 intelligence tests, 8,652 projective personality tests, 1,931 nonprojective personality tests, 2,530 tests for mental impairment, 256 conceptual tests, 398 tests for aphasia, and 3,515 miscellaneous tests including 2,695 administrations of a hearing attitude scale. Twenty-five specific tests were listed; the list would be even greater if the tests employed by the enlisted personnel of the clinical psychology sections were included. Furthermore, the variety of tests utilized was decreased by a number of factors: (1) in the initial phases of the program only four tests were "authorized" for use and although the number was later increased to seven, it was exceedingly difficult to obtain other (nonauthorized) tests without specific justification, local approval, and irritating delays; (2) because of war conditions some tests were not being published and others which were available only from foreign publishers were not obtainable; (3) the pressure of work upon psychologists was so great that there was a tendency to use the least number of tests to provide answers to the largest number of questions. The wide variety of tests actually employed indicates, among other things, that the problems being faced were many and varied, that psychologists with differing backgrounds favored different instruments and that there was good, critical judgment employed in deciding upon appropriate tests and test batteries.

As previously indicated, intelligence tests were utilized most frequently although projective personality tests were administered almost as frequently. Further inspection of the data revealed that the purposes for which intelligence tests were administered have changed since World War I. The psychologist is interested in determining more than the present level of intellectual functioning. The tests are used almost as often for "differential diagnosis," which is based upon scatter analysis, qualitative evaluation of the content of responses, evaluation of modes of intellectual functioning, and an evaluation of specific mental abilities and disabilities.

Personality tests have emerged in clinical psychology in World War II to a most prominent place; the reporting officers administered 10,583 of them. These tests continue to be most useful in differential diagnosis, serving as a primary adjunct to modern psychiatric techniques in diagnosis and therapy. In a large number of instances an evaluation of the psychodynamics of the personality under examination was a primary objective. In other instances, the tests were scrutinized for significant cues for therapy. According to the number of times administered, the projective personality tests had the widest applicability. The Rorschach Psychodiagnostic was administered 4,372 times, the Bender Gestalt was administered to 2,954 patients, and the Murray Thematic Apperception Test was utilized with 928 cases. The Minnesota Multiphasic Inventory was also used widely but was found less suited to individual clinical examination than to the problem of mass screening of psychoneurotic soldiers. Other personality tests were employed far less frequently than the four which have been mentioned. This is another area in which education and training are meager in the development of future psycholo-

TABLE 2

A list of research projects of clinical psychologists. Unofficial Research and Publications (completed)

The Use of Certain Psychological Tests in the Detection of Brain Injury; Aita, J. A., Armitage, S. G., and Reitan, R. M.

A Critical Evaluation of Certain Psychological Measures, Including a Proposed Screening Test, Used for the Determination and Evaluation of Brain Injury; Armitage, S. G. and Reitan, R. M.

Wepman Organic Survey; Wepman Joseph: *Journal of Speech Disorders*, 10: 283–286.

Rorschach and Psychometric Findings in Selected Cases of Soldiers with Traumatic Head Injuries; Schoenberg, G. M.

Tachistoscopic Studies on Brain Injured Cases; Dubin, S. S.

The Shipley Hartford Scale in 100 Selected Cases; Brown, Robert J.

The Wechsler-Bellevue Intelligence Scale as a Diagnostic Psychological Technique; Fisher J.

Group Psychotherapy for Neuropsychiatric Patients Being Discharged from the Army; Michaels, J. J. and Milton, E. O.; *Occupational Medicine*. January 1946, 1: 60–74.

Comparison of Independent Judgments of Psychiatrists and Interpretation of Test Batteries by Psychologists in 50 Cases of Disputed Differential Diagnosis; Schwartz, Bert D.

Contemplated Research (In Process)

Laboratory Study on the Problem of Anxiety.

A Study of Wechsler-Bellevue Scatter Patterns as Diagnostic Aids.

A Study of the Relationships between Full Scale and Verbal Scale Wechsler-Bellevue I.Q.

A Study of the Effectiveness of the Harrower-Erickson Multiple Choice Rorschach in Screening Psychoneurotic Patients.

Visual Aids in Therapy.

Tests and Therapy for Aphasics.

Psychological Studies in Patients with Traumatic Injury to the Head Correlated with Neurological and Neurosurgical Studies.

The Utilization of Group Psychotherapy in an Authoritative Setting.

A Group Thematic Apperception Test for Screening Purposes.

The Extent and Effectiveness of Treatment by Electric Shock and Insulin on Psychotic Patients as indicated on Psychological Tests.

The Neurotic and Psychotic Concept of Body Image as Measured by Drawings of a Man and Woman.

The Nature and Progress of Therapeutic Education with Aphasics.

The Area of Aphasic Re-education.

The Adjustment Pattern of the Hard of Hearing Individual.

Investigation of Parent-Child Relationships (especially in cases of extreme parental dominance) with the Rorschach and the Murray Thematic Apperception Test.

The Relationship Between Morale and Nervous Disorders.

The Personality Structure of Patients with Peptic Ulcer.

The Civilian Adjustment of 1000 Neuropsychiatric Casualties.

gists. It is obvious that these tests can be as helpful in civilian practice as they were in Army practice.

Tests of conceptual thinking were found particularly useful in cases suspected of psychosis and/or organic brain damage. Much additional research is still needed to determine the best methods of measuring conceptual thinking and its relation to psychiatric and organic brain disorders. In the area of impairment, the narrative statements revealed that existing tests were not adequate and several mentioned that the Shipley-Hartford Scale was the least useful. It is felt that outstanding opportunities for research in this area were overlooked during the war.

The data on specific tests indicate further that several batteries of tests were developed for the examination of patients with aphasia. Little knowledge was available concerning this disorder at the beginning of the war, partly because it was a rare occurrence. Although there were some discussions available in the literature, there was little of a practical nature, either in diagnosis or therapy. In 1945 the psychological diagnosis and re-education of aphasic patients were made the responsibility of clinical psychologists. In the course of this experience, existing aphasia examinations were revised and in most instances combinations of tests were developed. The data revealed further that other types of tests were applied in this area. The patient was examined as a whole, his total assets and liabilities evaluated, and an appropriate program of rehabilitation and re-education outlined. A number of important advances in diagnosis and treatment were made. Some of these contributions were incorporated in a War Department publication (TB MED BULL 155, April 1945); others were incorporated in tests developed by Captain Jon Eisenson (published by the Psychological Corporation); additional tests and training procedures were developed by Second Lieutenant Joseph Wepman and by Captain Louis Granich.

Inspection of the narrative statements indicated that despite numerous limitations psychologists conducted some research. Some of this research was concerned with the continual validation of the psychological tests already being utilized. This was done by intratest comparisons, informal validation against external behavior criteria, comparison with psychiatric diagnoses, comparison with symptomatic difficulties, and validation against therapeutic outcome. Table 2 lists the studies that were

reported. This list is incomplete, for a number of discursive articles which have been published by clinical psychologists are not included. Table 2 may, therefore, be interpreted as a conservative statement of "current" research activities of the fifty respondents.

SUMMARY AND CONCLUSIONS

1. Clinical psychologists have been devoting an increasingly larger proportion of their time in the Army to professional responsibilities.

2. Psychologists devoted more than half of their time to two major activities: (1) individual psychological examinations, and (2) guidance and therapy.

3. The Army clinical psychologist is infrequently called upon to give routine tests for evaluation of intellectual level. Personality examination, including an evaluation of the patient's psychodynamics, is now the most frequent reason for referral; even intelligence tests are used in dynamic interpretations of personality structure and personality process.

4. The results of this survey are suggestive with respect to training needs of clinical psychologists who are called upon to work with neuropsychiatric patients. Three main changes in emphasis are indicated: (a) careful attention should be given to training in personality testing and evaluation, with special stress upon projective techniques and methods of evaluating patient psychodynamics; (b) there is a clear need of intensive supervised training in counseling and therapy for which adequate clinical facilities, as part of the training program, are indispensable; (c) clinical work without correlated opportunity for clinical research is stultifying; hence, training is needed in the specific problems of clinical psychology.

5. In terms of diversity of function despite numerous handicaps, the results of this survey suggest that the commissioning program for psychologists was successful. Furthermore, those participating in the program gained experiences which will be invaluable to them in attempting to solve the problems with which all social scientists must cope.

THE PLACE OF EXPERIMENTAL PSYCHOLOGY IN THE UNDERGRADUATE CURRICULUM

ANNE ANASTASI

New York City

AT A time when most college faculties are engaged in a re-evaluation of post-war curricula, it should be of interest to psychologists to consider the practices and opinions of some of their colleagues concerning the teaching of certain basic courses in the field. The present study is directed toward one such course, the laboratory course in experimental psychology as taught in the undergraduate curriculum. This is a preliminary and informal study which, it is hoped, will stimulate further discussion, both of this course and of other basic courses in psychology.

In the attempt to clarify the place of experimental psychology in the undergraduate curriculum, two approaches have been employed. First, 75 college catalogues were examined for information regarding existing practices in leading colleges. Secondly, a mail inquiry among 56 outstanding psychologists furnished an indication of what is considered desirable practice, as well as of the direction of development in the undergraduate teaching of experimental psychology.

PART I: THE CATALOGUE SURVEY

The data for the present part of the survey were obtained from the catalogues of the following 75 colleges[1] distributed in 36 states:

U. of Alabama
Barnard
U. of Buffalo
Brigham Young
Brooklyn
Brown
Bryn Mawr
U. of California, Berkeley
U. of California, L. A.
U. of Southern California
Catholic U. of America
U. of Chicago
U. of Cincinnati
U. of Colorado
Columbia
U. of Connecticut
Cornell
Dartmouth
Duke
Fordham
U. of Georgia
George Washington
Goucher
Harvard
Hunter
U. of Illinois
U. of Iowa
Indiana
Johns Hopkins
U. of Kentucky
U. of Louisiana
U. of Maryland
Miami (Ohio)
U. of Michigan
U. of Minnesota
U. of Mississippi
U. of Missouri
Mount Holyoke
U. of Nebraska
U. of New Mexico
College of the City of N. Y.
New York University
U. of North Carolina
Northwestern
Oberlin
Ohio State University
U. of Oklahoma
Oregon State
U. of Oregon
Pennsylvania State
U. of Pennsylvania
U. of Pittsburgh
Princeton
Purdue
U. of Rochester
Skidmore
Smith
Stanford
Swarthmore
U. of Syracuse
U. of Tennessee
U. of Texas
Tufts
Tulane
Vassar
Vanderbilt
U. of Vermont
U. of Virginia
U. of Washington (Seattle)
Wellesley
U. of West Virginia
Western Reserve
William and Mary
U. of Wisconsin
Yale

[1] In the case of universities, only the undergraduate liberal arts curriculum was considered.

Since it was the aim of this survey to contribute toward a clarification of the most effective direction in which the teaching of undergraduate experimental psychology can develop, mere statistical "nose counting" would not have answered the question. A survey of existing practice in a random sample of all American colleges would undoubtedly have been overloaded with small colleges. In such colleges, laboratory work in psychology must often be curtailed or even excluded for other than educational reasons. For example, psychology may be taught in the department of philosophy or education rather than in a separate department; or inadequate budgets for equipment, laboratory space, or suitably trained personnel will affect the teaching of the laboratory course in psychology more than it would

other courses. For these reasons, only larger or better equipped colleges were sampled in this survey. At the same time, a certain number of liberal arts colleges which are not part of a university were included since their curriculum is less likely to reflect merely the requirements of graduate and professional schools. The present survey is thus concerned with the well equipped liberal arts college which maintains high academic standards with a minimum of extraneous handicaps in its curricular organization.

(1) *How many colleges offer experimental psychology and how many semesters are offered?*

A course was classified as "experimental psychology" for the purposes of this survey if it provided regular, weekly, individual laboratory work involving controlled experiments on a variety of problems in general psychology. Thus, courses dealing primarily with statistics, mental testing, or physiological psychology, have not been tabulated under the rubric of "experimental psychology." Similarly, courses furnishing only group demonstrations or a discussion of methodology with no individual laboratory work by students were not so classified. On the other hand, when the introductory course included regular laboratory experiments, it was tabulated as "experimental psychology" provided it was clear that the amount of time devoted to individual laboratory work and the nature of such work were approximately equivalent to those of "experimental psychology" courses given elsewhere. Such a classification seemed justifiable for the present purpose in view of the fact that there appeared to be closer similarity between the introductory course with laboratory given in some colleges and the "experimental psychology" courses offered elsewhere, than there was among courses taught in different colleges under the title of "experimental psychology." The basic concern in the present survey was with the amount of individual laboratory work in experimental methodology which the student receives in his undergraduate psychology curriculum, irrespective of the label of the course in which such training was provided.

All of the 75 colleges surveyed offered some experimental psychology as defined above, the number of semesters ranging from one to five, with a mode of two. The distribution of semesters[2] is as follows:

Semesters	1	2	3	4	5
Colleges	18	39	9	7	2

(2) *How many colleges require experimental psychology of all their majors and how many semesters are required?*

A number of colleges do not include a statement of concentration requirements in their catalogues and a few give only point requirements without specifying courses. In such cases, we cannot assume that no specific courses are required for concentration, since such requirement may be introduced through the departmental approval of concentration programs, which often presupposes a minimum "core curriculum" for all majors. Among the 75 colleges in the present survey, 28 do not report concentration requirements in the catalogue. The remaining 47 colleges distribute themselves as follows in reference to the number of semesters of experimental psychology which they require of all majors in psychology.

Semesters required	0	1	2	3
Colleges	8	13	25	1

It will be noted that the mode is again two semesters, 25 of the 47 colleges falling into this category. Several further points may be of interest in interpreting these results:

(a) General psychology is the most common course requirement. Next comes experimental psychology, with statistics a not too close third.

(b) Of the eight colleges which report course requirements but do not include experimental psychology among such courses, most specify only general psychology. It is rare to find other courses prescribed for majors when experimental psychology has been omitted.

(c) In only two of the 75 colleges included in the survey were alternative programs for different "types" of majors given in which experimental psychology was not prescribed for all. These two are included among the eight colleges tabulated above as requiring no experimental psychology. To be sure, a number of colleges describe alternative programs for different "types" of majors, but in all except the two cases mentioned, experimental psychology is a common requirement for all.

(d) All of the above tabulations are in terms of minimum requirements. In several of the colleges, a larger

[2] For colleges which operate on a quarter system, the closest semester equivalent was computed in terms of weeks.

number of semesters of experimental psychology is *recommended* for all majors, although none or one semester only may be required. Similarly, among the 28 colleges which state no concentration course requirements, a few list recommended courses, experimental psychology being frequently mentioned among the latter. It is also of interest to note that the most frequently recommended courses for psychology majors outside the psychology department are biology or zoology, with philosophy a not too close second. In a few colleges, biology is prerequisite to general psychology.

PART II. THE MAIL INQUIRY

A mimeographed letter was mailed to a carefully selected group of 56[3] outstanding American psychologists. The names were chosen on the basis of professional status and recognition, geographical distribution, and areas of interest and professional activity. Of the 56 psychologists, 12 are not engaged in teaching but in the application of psychology in such fields as clinical, consulting, industrial, personnel, radio, and advertising. Of those engaged in college teaching, many were included whose predominant fields of interest lie not in experimental psychology but in such areas as applied, social, child welfare, clinical, or abnormal. Geographically, the 56 psychologists are distributed among 23 states throughout the country.

(1) *Number of semesters of experimental psychology to be required of all students concentrating in psychology.*

An analysis of the 47 replies indicates, first, that all of the respondents agree that some training in experimental method is essential for all types of students concentrating in psychology and is, in fact, one of the chief contributions which the undergraduate program in psychology can make. In reference to the way in which this training can be most effectively given and the amount of time to be devoted to it, the replies fall into three major groups, with a fourth "mixed" or ambiguous category. The four categories, together with the number of respondents in each, are as follows:

A. It may be more effective to give the training in experimental method in connection with courses in the student's chosen area of specialization within psychology—(3).

B. A uniform laboratory course in experimental psychology is essential for all types of psychology majors, but one semester may be sufficient. In this category are also included those letters stating that "at least one semester should be required."—(11).

C. A uniform, one-year laboratory course in experimental psychology is a minimum essential in the "core curriculum" of all students concentrating in psychology—(23).

M. Mixed, ambiguous, or too general to permit classification in reference to the *length of time* which should be devoted to experimental psychology—(10).

Category A. The three letters are unambiguous as to the importance of training in scientific method, but point out that the "traditional" or "drill" type of laboratory course is not as effective a way of putting such method across to the student as laboratory work on specific problems in, e.g., industrial psychology, personnel, etc. Thus, one respondent writes, "It is my impression that most undergraduate laboratory courses are *drill* courses, patterned after the laboratories in physics and chemistry. These undergraduate courses do not teach research methods. . . .I believe it would be possible to set up an applied laboratory course, using a judicious selection of topics to introduce the student to a wide variety of currently useful technological procedures . . . Here we have preferred to allot such practice to the specific courses. The time may come, however, when we shall regard it as desirable to establish a general applied laboratory course for those who are not going further." It should be noted that these letters are primarily an argument against the *content* of the experimental psychology course as given in colleges which have come within the writers' experiences. This question of content will be discussed more fully as a separate question later in the report.

Category B. Typical comments follow:

"We believe the requirement of one semester of experimental psychology is essential to all students majoring in the department, and this includes those who intend specializing in industrial or clinical psychology. My own personal reaction on the subject of the experimental psychology course, is

[3] It was our goal to obtain the opinions of 50 psychologists. On the assumption of a 90 per cent return, therefore, 56 letters were sent out. Actually, 47 returns were received and used as a basis for the present part of the survey. The names of the respondents are available for anyone interested in examining them.

that it really represents minimal contact with experimental methods in psychology. I would be most unwilling to see it eliminated here, and there is not one member of the department who does not agree with this attitude."

"I believe that training in experimental psychology is desirable for *all* majors in psychology. I think that there is a certain psychological sophistication that comes from a course of that sort which does not seem attainable in any other way. I sometimes find that in some of my advanced courses there are majors who have not yet taken the laboratory course. I can pick out their papers without knowledge of whether or not they have had this course. Those who have taken a laboratory course do seem to acquire a "sense of evidence" in psychological matters. For this reason I believe that some training in experimental psychology would be helpful to all undergraduates including those who plan to work in an applied field, such as industrial, clinical, or market research. . . . We require a single semester course in laboratory work of all majors in psychology. Beyond that the experimental courses consist in individual directed research."

Category C. Among the 23 replies are to be found the following illustrative remarks:

"I do not believe that enough good laboratory work can be done in the basic fields of psychology within a period of shorter than a year. Reduction to one semester would mean either too few experiments or too many "wishy-washy" demonstrations to make up for the deficiency in the experiments. . . . I should not like to see the experimental psychology course eliminated for majors. It seems to me there is such a thing in psychology as a "core curriculum" and that the subject matter of a "core curriculum" should be the common exchange of all psychologists, whether they are clinical people, experimentalists, testers, statisticians, or what not."

"I believe that students majoring in psychology should certainly have a full year of experimental laboratory work and there is no adequate substitute for such training. My experience with interns who are preparing for clinical work has strengthened any conviction I may have had at the beginning of our training program, as to the importance of the ability to think in terms of an experiment."

"I am very much in favor of requiring a full year's course in experimental psychology, not only for those who will go on to graduate work in "pure" psychology, but also for those who intend to work in an applied field. It is my observation that solid instruction in experimental psychology is the best way to prevent the uncritical acceptance of fanciful theories and fads of technique that frequently plague the clinical field."

"I have talked over your question with our department and we are unanimously of the opinion that the requirement of a full year of experimental work should be maintained for psychology majors without distinction with respect to subsequent plans for work in clinical or other essentially non-experimental branches of the field."

Category M. The letters are varied. Some respondents are ambiguous with respect to the question of duration; others have apparently overlooked the question of time and merely write a strong plea for the inclusion of experimental psychology in the curriculum of all majors. A few specifically state that they cannot answer the question in terms of time. One respondent, for example, writes: "I would place more rather than less emphasis on it for all psychology majors, whether planning to continue with graduate work or not. The question of *time* spent on it, *viz.*, one year or one semester, is of course secondary to the ability of students of different levels of intelligence, etc., to become really proficient in the design and execution of good experiments."[4]

(2) *The value of experimental psychology for those planning to enter "applied" work.*

It is interesting to note that several respondents (15) refer specifically to the fact that in their experience in various applied fields of psychology in either civilian or military work, they have found those who were trained in experimental psychology to do better than those trained in more "applied" areas from the outset. Such letters frequently emphasize that persons who plan to enter clinical, industrial, personnel, or some other applied field are

[4] Into *category M* has also been placed one letter which does not fall into any other group in regard to amount of experimental psychology to be required. This letter proposes a minimum of one year of experimental psychology for two groups of students, *viz.*, those who are going into graduate work and those who are going into semi-professional work without graduate training. For those taking a "culture major," however, not more than one semester of experimental psychology is advocated.

the very ones who most need a year of experimental psychology as undergraduates. A few examples of these statements are reproduced below.

"Concerning your final question, I can speak only for the clinical field. In this field I should consider a person without such training, ill-equipped to serve. Too often, those who are interested in clinical work are uninterested in strict scientific thinking but want to enter the field because of interest merely in helping people. I think such people should either go into another field such as social work, or subject themselves to the full discipline of the field of psychology."

"As for students who are planning to work in an applied field such as industrial, clinical, or market research, I would say that experimental psychology is a must whether or not they are majors in psychology."

"My personal feeling is very definitely that such an experimental course should be required of all undergraduate majors and perhaps especially those who are going into applied fields. . . . I feel strongly on this matter because I have seen too many so-called clinical psychologists who were completely unoriented in the field of psychology as a science, but who perhaps were skillful in certain techniques."

"In closing it might interest you to know that we had very good luck in the Naval program in turning some of our young experimental Ph.D.'s into clinical psychologists. The answer seemed to be that with an experimental attitude toward a problem they learned more quickly the salient facts, significant cues, and methodological approaches in the clinical field."

"If an adequate appreciation of scientific method is not laid down in advance I see no possibility that the student in the applied field can get other than a compendium of facts and opinions. . . . Having just come out of the AAF's psychological program—(an applied effort if there ever was one!)—I can say with some assurance that the best "appliers" were those with a solid scientific background."

"It has been my observation that during the war the most effective psychological work was done by men and women who had been trained in laboratory methodology and statistical techniques. This impression has been corroborated by many conversations with men in the applied and clinical fields."

"In the light of my work during the past ten years, I would certainly urge anyone going into the industrial field to take a reasonable amount of experimental psychology. I feel it is an asset to anyone working in the field of consumer or market research and am always skeptical of psychologists who have not had the benefit of considerable work in experimental design."

"I have some rather strong opinions concerning the necessity for training in experimental psychology for any person who hopes to work in the field of applied or business psychology. . . . I am thoroughly convinced that undergraduate majors in psychology should have as thorough a training in experimental psychology and scientific method as is possible to give them."

(3) *The content of the course in experimental psychology.*

A point stressed by many of the respondents is the importance of considering the content of the laboratory course in experimental psychology in evaluating its contribution to the undergraduate curriculum. On the negative side, the chief objections voiced against such courses as given in certain colleges include: too much drill, busy work, and routine repetition of experiments with predetermined results; undue attention to the manipulation of apparatus, neat notebooks, and other mechanical aspects of laboratory work; and narrow range of topics and over-emphasis of a few traditional "brass instrument" experiments.

On the positive side is mentioned the desirability of a *broader distribution of topics*, with a large number of relatively brief experiments on each topic, ranging from receptor processes, through perception, learning, motivation and emotion, to esthetic judgment, reasoning, and imagination. A further suggestion is for more attention to the *practical applications* of experimental methodology to such areas as industrial psychology, advertising, market research, and public opinion surveys. The most frequently repeated recommendation is for more emphasis upon *experimental design*, as illustrated by the formulation of hypotheses and planning of original experiments by the student, full discussion and evaluation of the experiments performed, and the selection of class experiments particularly suited to illustrate the logic of experimental method. For those colleges in which a separate course in statistics is not taught in the psychology department, the importance of including training in the statistical analysis of data

in the experimental psychology course is often mentioned.

In concluding this brief survey of professional opinion concerning the place of experimental psychology in the undergraduate curriculum, it is apparent that experimental psychology remains the basic core around which the departmental major is fashioned. Experimental psychology no longer, however, represents solely a "brass instrument" course restricted to a limited number of topics such as sensation. The conception of this course and its place in the departmental curriculum has been redefined and sharpened to include the entire gamut of psychological inquiry. To be sure, it has often been pointed out that *all* courses in modern psychology are "experimental" in the sense that their data are, whenever possible, experimentally derived. But it is the function of the course in experimental psychology to emphasize the *methodological* aspects of psychological inquiry, and to acquaint the student at firsthand with the specialized types of relevant experimental design and with the problems and difficulties encountered in obtaining data under controlled laboratory and field conditions. It is toward the fulfillment of these objectives that the undergraduate course in experimental psychology appears to be evolving coordinate with the rapid growth and increasing diversification of present day psychology.

A COMPARISON OF ASTP PSYCHOLOGY GRADUATES WITH OTHER GROUPS IN THE AAF CLASSIFICATION SCHOOL

ARTHUR O. ENGLAND AND HARRY LAURENT, JR.
The Ohio State University *Western Reserve University*

INTRODUCTION

IN NOVEMBER of 1943, a conference was held with the G-1 of the Army Service Forces and the A-1 of the Army Air Forces. The outcome of this conference was the decision that a number of ASTP psychology majors who were then studying at various universities would take a specialized course of training in AAF classification and personnel procedures; they would then be assigned to classification duty in the AAF.

The Classification School, organized and directed by the writers for the AAF Eastern Flying Command in July, 1943, conducted this training for the ASTP groups.

This report compares the qualifications and success of the ASTP psychology majors with other groups attending the Classification School and presents a limited picture of their overall job placement and success in the Army Air Forces.

Even though the ASTP group did have certain basic college courses in such allied subjects as testing, interviewing, and statistics, there still were the particular needs of the AAF to be met. But perhaps the biggest problem facing the faculty of the Classification School was the fact that only a very small percentage of the ASTP group were members of the AAF, or had had any previous AAF administrative experience. Thus, orientation concerning the methods, forms, and procedures employed in the personnel data system of the AAF was necessary.

An unpredicted fact was that of morale. The ASTP group had undoubtedly been promised more and received less than any other Army-sponsored group. The Army took a group of very superior students, more highly educated and with higher AGCT scores than the average enlisted man and gave them special training. Many promises were made to these men. During recruitment, the Army's need of them was emphasized. The Army published a booklet to arouse interest in the ASTP which, though it did not state outright that the graduates would receive commissions, implied strongly that such would be the case. There were even talks by high-ranking officers from Washington implying that commissions would be forthcoming along with important jobs that would make full utilization of their specialized skills and training.

Because of changing fortunes of war and shifting of needs, the majority of these promises to the psychological groups were never fulfilled. Commissions were not given. Early graduates ended up performing all kinds of odd jobs unrelated to their psychological training. After this unfortunate series of events the ASTP group under discussion arrived at Maxwell Field, Alabama. However, in spite of disappointments, these men eventually performed a valuable job for the AAF.

CLASSIFICATION SCHOOL PROCEDURES

Of the 200 ASTP psychology graduates sent to the Classification School, 46 received their training at the Ohio State University, 44 at Harvard University, 65 at Cornell University, and 45 at the University of Pittsburgh.

During the two weeks between the last regular class of the Classification School[1] and the commencing date for the ASTP class, a revised instructional manual was prepared for them. The book, which was really a 200-page mimeographed text, was entitled "Manual for Course of Instruction in AAF Classification for ASTP Graduates."

Enrichment features in the course of instruction included guest lectures, representing various perti-

[1] For a more complete description of classification in the AAF, see England, A. O., and Laurent, H., What is classification?. *J. exp. Educ.*, 1946, **14**, 317–333.

nent personnel jobs in the AAF; an occupational visit to a B-24 airplane maintenance hangar and flight line; motion pictures on classification and technical and nontechnical phases of flying and related activities; and lectures and slides in aircraft identification.

To combat the low morale mentioned above, furloughs were arranged for the group immediately after the completion of the 21-day course. This made it possible for them to be home for Christmas, 1943. Secondly, a straightforward, frank discussion was held with the group on their job possibilities, what they might expect, and what avenues were open. The combination of these two features produced excellent results.

PSYCHOLOGICAL TRAINING AND CLASSIFICATION SCHOOL SUCCESS

The AAF student population was divided into three main categories for the comparative part of this study. These three groups were enlisted men, henceforth referred to as "GI's," enlisted women, henceforth referred to as "WAC's," and the psychology graduates of the Army Specialized Training Program, henceforth referred to as "ASTP." Out of the 544 total school population of that date (January 1944), 310 were GI's, 34 were WAC's, and 200 were ASTP graduates.

Only a general summarized report is presented in this article because individual records of the students were not available for detailed analysis. This condition at once eliminated the possibility of computing correlation coefficients to measure the different variables such as army grade, AGCT score, length of service, and other factors. However, a brief picture of what happened to the ASTP psychology graduates once they left the universities, their success in Army training, and something about their job placement is of some general interest.

School grades were determined on the basis of a final examination and quizzes given throughout the course and recorded on the customary five-point basis.

It is obvious from the inspection of the final grades obtained that the ASTP group was superior to the other two population groups (Table 1). They obtained 31 per cent A's, which is two and one-half times the percentages of A grades of the GI's and WAC's. The percentage of B grades obtained was about the same for all groups. The ASTP group obtained a smaller percentage of C grades than did the other two groups, and the remaining percentages in the two poorer grade categories were almost zero.

There are many factors that tend to contribute to the attainment of higher grades by this group: they had a higher average AGCT score, they all had some college education, and all had psychological training which contained many subjects directly related to military classification.

The ASTP group with a mean AGCT score of 131.1 was more than 11 points higher than the mean score of the other two groups. Inspection of the final grade distribution of ASTP's in relation to other groups, as well as the grand total grade distribution, indicates that the relationship between high AGCT scores and successful completion of Classification School is positive.

The ASTP graduates were superior to the other two groups in the matter of civilian education as shown in Table 1. They had an average of 16.4 years in school, or graduation from college. The WAC's had an average of only one year at college, and the GI's had only a little better than one semester of college. Although high school graduation was established as one of the entrance requirements to the Classification School, outstanding non-high-school graduates occasionally were admitted. The range in years of school (Table 1) shows the extent of variation.

The data are not shown in Table 1, but to be classified as a Classification Specialist prior to attending Classification School was of help in successfully completing the course. An examination of the grades made by those students who had had experience as Classification Specialists showed that none of them made less than a C in the course. In general, the on-the-job training was a contributing factor to the acquisition of knowledge of classification activities. Inasmuch as a significant part of the course consisted of acquainting the students with basic classification procedures, it was expected that individuals who had previously been exposed to these procedures would obtain a better-than-average grade.

It may be assumed that the courses taught in ASTP pertaining to testing, test analysis, inter-

viewing, and such subjects had a bearing upon the chances of obtaining superior grades.

Table 1 shows that the mean length of military service for the WAC's was less than one-half as great as the GI or ASTP groups, though there was little difference between the final grades obtained by the WAC and GI groups. The mean length of military service for the ASTP students and the GI's was about the same, though the ASTP grades

TABLE 1

Comparison of ASTP psychology graduates with GI's and WAC's

VARIABLES	GI	WAC	ASTP	TOTAL
Number of Students	310	34	200	544
Percentage of Group Obtaining Each Final School Grade:				
A	11.62	11.77	31.0	18.73
B	47.42	50.00	51.5	49.26
C	35.84	35.29	17.0	30.09
D	5.16	2.94	0.5	3.31
E	.65	0.00	0.0	.37
AGCT Scores:				
Range	99–153	99–146	110–156	99–156
Mean	119.28	117.99	131.1	123.63
Years in School:				
Range	8–18	9–17	13–20	
Mean	12.7	13.2	16.4	
Length of Military Service in Months:				
Range	6–69	2–12	9–37	2–69
Mean	16.37	6.99	16.9	15.98
Age in Years:				
Range	19–47	21–40	19–39	19–47
Mean	25.40	25.65	26.9	25.88

were much higher. Therefore it is questionable as to how much weight can be placed upon length of military service as influencing the final grade obtained.

There was little difference between population groups with respect to age. The range and the means were similar in each case. The design of this study was not such that the influence of age can be ascertained.

JOB PLACEMENT AND JOB SUCCESS OF THE ASTP GROUP

Perhaps the best criterion of success of a school producing Classification Specialists is the evaluation of the results of the work they performed on the job. Measuring correct job placement, maximum utilization of manpower, and efficient personnel management is not an easy task because of the extenuating circumstances that can always be cited to "justify" retaining an individual on a military job that is not commensurate with his background and training. Nevertheless, one of the best measures existing for evaluating utilization of personnel is to obtain the number of "malassignments" at any Army Base. This is usually determined by comparing the job the individual is actually performing against his classification, that is, the job he is qualified for by reason of technical school graduation or equivalent on-the-job training. This process may be further verified by actual spot checking of the men on their jobs.

Because of the changing fortunes of war it was impossible to obtain complete information on the ASTP group after they left the Classification School. However, an almost complete job follow-up could be obtained for one-fifth of the ASTP group, since they were reassigned within the AAF Eastern Flying Training Command. The other four-fifths of the ASTP group were reassigned to other subcommands within the AAF Training Command and only partial information has been available on their job placement and ultimate job success.

One rather important follow-up device was used to gain as accurate a picture as possible of the Classification Specialists. All students were encouraged to keep in personal touch with the school and to feel free to seek advice on their individual problems. This procedure severed the red tape involved in communicating through military channels.

From the standpoint of job placement, practically all the ASTP graduates were employed immediately after graduation from the Classification School as Classification Specialists.[2] Later, many of the

[2] Classification Specialist's job specifications are briefly: Interviews enlisted men to obtain civilian and military job history and other related information to be used for classification and assignment of military personnel. Periodically checks the military occupational specialty and duty status

ASTP graduates progressed up the job family group to become heads of personnel and classification sections, with the job title of AAF Administrative Technician. A very small percentage of them became employed in aviation research units.

Considering only the criteria factors in AAFEFTC there was a definite measure made of malassignments which is revealed in Table 2.

Considering the total population of AAFEFTC (more than 80,000), the reduction in malassignments represents a significant step toward the solution of personnel wastage. It cannot be said that the only factor affecting the reduction of malassignments within the AAFEFTC was the increase in Classification Specialists. But it is interesting to note that as the number of trained Classification Specialists increased each month, the number of malassigned personnel decreased accordingly.

TABLE 2

Relationship of percentage of malassingments in AAFEFTC and assigned classification specialists

MONTHS	NUMBER OF CLASSIFICATION SPECIALISTS	PERCENTAGE OF MALASSIGNMENTS
November 1943	294	2.6
December	503	2.5
January 1944	571	2.1
February	634	1.8

The ASTP graduates played a definite part in bringing about important reductions in malassignments in the AAFEFTC, thus aiding the achievement of greater personnel utilization. Statistical reports for the entire AAF Training Command also supported the findings of the AAF Eastern Flying Training Command.

Another source of control over effective job placement and personnel utilization was found in the official reports by Classification Audits Teams and Inspector General's Department of Headquarters, AAFEFTC, relative to personnel conditions at the various air bases. Analysis of the file copies of reports after July 1, 1943 in the AAFEFTC indicated there had been a marked increase in efficient job placement as well as utilization.

Informal, personal reports from the supervising officers of the ASTP group indicated that after a very short period of adjustment to the job the ASTP graduates proved to be very capable workers.

SUMMARY

1. The ASTP group was superior to the GI and WAC groups as reflected by the final grades obtained in Classification School.

2. The ASTP groups had a much higher average AGCT Score.

3. To be classified as a Classification Specialist prior to attendance at Classification School was a definite help in successfully completing the course.

4. Length of military service appeared to have little or no influence upon successfully completing the course.

5. After completion of the classification training program, the biggest percentage of ASTP psychology graduates was employed at various Army Air Bases as Classification Specialists.

6. Concurrent with the increase of the number of Classification Specialists at the various Air Bases in the AAFEFTC, the number of malassignments was reduced appreciably. Part of this achievement may logically be attributed to the efficient job performance of the ASTP group.

7. Classification Audit Teams and Inspector General's Department reports gave further evidence that there was definite improvement in the overall efficiency of the classification program at the various air bases following the assignment of the ASTP group.

8. Informal, personal reports from Classification Officers indicate that the ASTP group in general became well adjusted to their jobs and in many instances were promoted to the top administrative jobs in the AAF. This seems particularly significant in view of the many disappointments suffered by the group relative to obtaining commissions and important research jobs. In spite of these setbacks, the psychology graduates accomplished much and their contribution to the AAF cannot be underestimated.

against the qualification card of each man in the organization and ascertains whether military personnel are classified and performing duties commensurate with their military or civilian training. May administer and grade group tests of intelligence and aptitude and record data on qualification records. May prepare reports on classification and assignment.

NAVAL AVIATION PSYCHOLOGY. IV. THE CENTRAL RESEARCH GROUPS[1]

DONALD W. FISKE

Lieutenant Commander, H(S), USNR

THE reader of the preceding three articles in this series (*1*, *2*, *3*) may well have wondered how the Naval Aviation Psychology program began and how it was organized. He may have asked such questions as: How was validation carried out on the tests used by the selection and field service organizations? Who determined that men were needed for the special services? By what means was research coordinated? The answers to these questions will help to define the function of the fourth group of aviation psychologists, located in the central research organizations. Historically, two of these groups came first and continued to operate even when newer field establishments were set up or closed. Yet in a discussion of psychological activities in a Navy which stresses local autonomy, it is entirely appropriate that the many field activities should be considered before the central research groups.

THE PENSACOLA GROUP

The Aviation Psychology Section at the Naval Air Station in Pensacola, Florida, which is a few months older than the Aviation Psychology Branch in Washington, provides an excellent illustration of the part played by medical officers in bringing psychology into Naval Aviation. Psychologists were associated with the medical staff from the very beginning when a project of the National Research Council on the selection of Naval Aviators was established at the Naval Air Station, Pensacola. This was the logical place because all but the first few hours of flight training were given there. This project, originating under Civil Aeronautics Administration auspices at the request of the Navy, was staffed by men from psychology and related sciences. It investigated the relationship of more than thirty different physiological and psychological measures to success in flight training. The staff included several men who were among the earliest psychologists to receive Navy commissions.

Selection and Classification. One of the three principal areas in which this group functioned was in the selection and classification of aviation cadets. This activity continued the studies of the National Research Council project until the validation of tests was taken over by the Washington Section. The Pensacola group quickly recognized the difficulty of obtaining adequate criteria. As we have seen before, this obstacle was constantly confronting psychologists in selection programs. To meet the situation, the H(S) officers revised flight rating scales, made intensive studies of flight jackets, and correlated specific grades with specific tests (e.g., landing grades with measures of depth perception).

An early recommendation from the Pensacola project led to the first work on the problem of classification for advanced training. One study demonstrated the inadequacy of low pressure chamber tests as an aid in this placement. These officers also played a major role in the instructor selection projects; after the institution of a selection program based on this research, they carried out studies to check its effectiveness. Related activities included the compilation of attrition figures, studies of the reasons why cadets were dropped or wanted to be dropped from training, and assistance in the maintenance of records. One psychologist contributed his services to a squadron desiring help in selecting key instructors. He asked instructors: "Whom would you pick to instruct your kid brother?" From men chosen by this question and by similar questions put to cadets, the squadron obtained highly satisfactory placements. This is one of several instances when aviation psychology turned to a sociometric technique to appraise performance.

Vision. Also stemming from the NRC project was the interest of the Pensacola group in visual

[1] The opinions expressed are those of the author and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

problems, as shown by the continued research on the value of depth perception tests and of similar tests in the selection of aviators. One project sought to determine the importance of color vision for Naval Aviators and investigated the possibility of developing an improved test of this function. The reliability and validity of several visual acuity tests were examined. Again, much of the earliest Navy work on night vision was done by the staff at Pensacola. With their interest in physiological problems, it is not surprising to find them testing adaptometers and even writing a syllabus for night vision lookout training. After the establishment of the full scale program of night vision instruction for all aviators, Pensacola was the site of the school for training instructors and for developing the syllabus. Here also was carried out a major part of the research on demonstration devices and on such practical problems as the effects of prolonged exposure to sunlight upon subsequent dark adaptation.

A somewhat different project studied the effects of autokinesis. Night flyers following the single light of a plane ahead are likely to experience marked disorientation, which leads in some cases to accidents and near-accidents. This disorientation appears to be related to the autokinetic phenomenon. H(S) officers helped revise lighting systems to lessen the danger from autokinesis and carried out extensive research on the phenomenon itself.

Speech. The work on speech and communication, discussed in the preceding article (*3*), was begun in the Pensacola Section. Not only did this group develop methods of instruction and train many of the new speech officers, but it also carried on related research. The demonstrated need for a reliable and serviceable intelligibility test provided one problem. Although laboratory investigations had been made on this topic, the previous findings had to be carefully checked because many of them did not hold up under the actual circumstances. One project measured the effects of oxygen masks upon communication; another compared the relative intelligibility of alternative words commonly used in Navy communication procedures.

The middle element in the communication process, the equipment, was also subjected to critical review and testing. The standard speaking tube assembly may have been adequate for the low horsepower planes of two decades ago, but it was of dubious value in the heavier trainers of today. Investigators sought by research to improve the design of the mouthpiece, the diameter of the tube, and the construction of the helmet. The H(S) officers were also called upon to subject experimentally developed models to quantitative performance checks. They went into the rarefied atmosphere of the low pressure chamber to study the effects of high altitude and accompanying cold upon speech intelligibility.

One of the functions fulfilled by psychologists during the war was the pointing out of the obvious. For instance, it is not difficult to believe that one can hear better when the earphone or speaking tube outlet is approximately centered on the ear. Yet many aviators were using helmets which fitted so badly that they had to listen with their skulls, not their ears! Merely calling attention to the condition did much to motivate those responsible for equipment toward remedying the defect.

It is not possible to include all the work of the Pensacola group under three general headings. Some of the officers assisted in physiological studies on the effects of acceleration. Psychologists lectured regularly at the School of Aviation Medicine on statistics, effective speech, and similar technical topics. They also helped the ground school instructors in standardizing the lectures. Many of the specific projects of this group will ultimately be reported in the technical journals, as will other research carried out by aviation psychologists.

THE AVIATION GUNNERY GROUP

The first psychological research on Naval aviation gunnery was carried out by means of a civilian contract under the cognizance of the central Washington group. As soon as H(S) personnel were available, officers were assigned to this project and, subsequently, to the program based on the project findings. Later, a number of aviation psychologists were included in the score of specialists attached to the Naval Aviation Free Gunnery Standardization Committee which sought, among other things, to establish uniform curricula for gunnery schools. To obtain a working knowledge of the practical situation, these H(S) officers went through the regular gunnery course. Equipped with this insight, they undertook in the gunnery field a wide variety of activities, many of which were new to Naval aviation psychology.

In developing and maintaining the gunnery aptitude battery, experience showed that it was possible to locate or devise appropriate tests which would correlate fairly well with course grades, the best available criterion. Hence the criterion itself presented the chief problem. One part of the task was to improve the reliability of the grades against which the tests were validated. The psychologists were able to demonstrate that some scores with high "face" validity were actually undependable and that scores based on actual firing at towed targets were ordinarily unreliable. In an effort to improve the training and the criterion, reliable achievement tests were developed for many of the separate subjects and for the course as a whole. When standard examinations had been constructed, the distributions of grades compiled by a central records office evoked a variety of basic questions regarding the relative weighting of different course grades. This office sent out reports which permitted each of the various schools to know the relative standing of its students in each aspect of gunnery, thus calling attention to discrepancies in the training from school to school.

A major concern of the Standardization Committee lay in the field of training. Problems of selecting and training instructors were encountered, as well as the task of writing manuals for instructors. A new, more effective system of training gunners was originated. As part of the work on training aids, the psychological group produced training films and booklets which explained to the student gunners such topics as the elements of sighting techniques and of observation from the air. Reports of gunners' actual achievements in combat were distributed to increase motivation. The group also pointed out that the students' learning and motivation both suffered if their hits and misses were not always reported to them as soon after the firing as possible. Another project investigated the relative clarity of several graphic methods for illustrating the cones of fire for aircraft, the problem being to show on paper those directions from which an airplane's armament protected it against attack.

Various training devices were experimentally evaluated by this group. In the examination of these aids, the variability due to the apparatus and the reliability of the scores had to be determined. The instructional value of camera guns was assessed and procedures for using them effectively in training were developed. Employed as achievement examinations, these "guns" provided a practical test for knowledge of sighting theory.

The work of this group branched out into problems of design and operating procedures from the viewpoint of the man firing the guns. Equipment was tested for its efficiency and practicality. For example, a new type of gunsight was subjected to thorough trials which included a comparison with the standard sight then in use. In this experiment, the familiar problem of apparatus malfunction was not the least obstacle to be overcome.

In all of their activities, these psychologists were faced with the necessity for making sure that the training was training for the combat job. Unable to get first-hand data for a job analysis, they had to rely on the alternative of interviewing returned aircrewmen. Through an extensive program of such interviews, it was possible to analyze the practicability of the instruction received by these combat veterans and, by extrapolation, to evaluate current training.

THE CORPUS CHRISTI GROUP

The Corpus Christi psychology group, founded considerably later than the Pensacola group, expanded slowly as the need for its services grew. Basic research projects usually were directed to the older organization at Pensacola with its School of Aviation Medicine and attendant Research Laboratory. Hence the Corpus Christi group concentrated upon the many local problems at its huge training base, tending to make experimental investigations of current problems rather than to conduct long-range research projects.

Because the Corpus Christi station was similar in general function to the Pensacola station, many of the research projects at the former place paralleled those already reported for Pensacola. Flight jackets were analyzed to determine the predictive value of specific maneuver grades. Revisions of grading systems were recommended. The relationship between scores on depth perception tests and grades on maneuvers calling for that ability was determined. A check was made on the validity of the basic cadet selection tests for predicting outcome in the later phases of training. The problem of meaningful attrition reports was studied.

These psychologists at Corpus Christi also got over into classification and training problems. Their

assistance was sought in meeting the demand for screening procedures for two aviation rates. They set up a provisional method for selecting flight instructors before the nation-wide program was completed. Analysis of the instructor ratings made by cadets called attention to squadron differences in the techniques, the attitudes, and the morale of the instructors. Thus the psychologists at this station applied themselves to whatever was required by the particular situation at hand.

THE WASHINGTON GROUP

The central aviation psychology group in Washington started with a single billet in the Medical Research Section of the Bureau of Aeronautics. The organization grew from one ensign serving under a flight surgeon to a staff of a dozen commissioned psychologists assigned to the separate Aviation Psychology Branch in the Division of Aviation Medicine, Bureau of Medicine and Surgery. This expansion was partly a consequence of the development of field billets for more than seventy officers. A principal function of the Washington Branch was to help these men and through them to help Naval Aviation.

General Administrative Responsibilities. As the administrative center of the aviation psychology program, the Washington Branch was responsible for recommendations on the procurement and placement of H(S) officers for aviation work. It had cognizance over the administration and interpretation of the aviation cadet selection tests and advised on the minimum standards set for them. In addition, it maintained informal liaison with all aviation psychologists and initiated official actions as required by the needs of the field.

Primary Technical Responsibilities. The original and basic function of the Washington group was the analysis of results from the selection tests. In the light of the early findings reported by the NRC Pensacola research project, a number of tests were given an experimental trial on all aviation cadets. After sufficiently large groups had received their wings or had been washed out, their test scores were correlated with the outcome of their training. The tests were not used for actual selection until they had been cross-validated on several populations whose test scores had been locked up to prevent contamination of the criterion. The Aviation Psychology Branch maintained continuing checks upon the efficacy of these instruments, especially when changes in procurement policy altered the nature of the applying population.

Although the need for validating the selection tests against combat criteria was repeatedly stated in official memoranda, wartime expediency prevented the establishment of this ultimate check during the early years of the war. However, arrangements were eventually made for several psychologists to go out to the fleet. They faced the familiar problem of developing a satisfactory criterion. Number of planes shot down, decorations, and other alleged measures of proficiency were examined and found inadequate. After considerable preliminary research, a nominating technique was established which yielded dependable results. Aviators with combat experience were asked to name two pilots with whom they would most like to fly in combat and two with whom they would least want to fly. They were also asked to indicate the reasons for their choices on a checklist prepared from the free responses of previous respondents.

Two conditions were responsible for the success of the technique. Wherever possible, the H(S) officers lived with the squadron and got to know its members on an informal basis so that the actual request for their help, although officially sanctioned, did not come from a total stranger or through impersonal channels. The investigators were also supported by an official guarantee that the pilots' opinions would be treated confidentially and would be used for research alone. Inspection of the preliminary free response materials and analyses of the nominations gathered in the major project left no doubt that the pilots had cooperated in a more than satisfactory manner.

There were other developments of this combat criterion project carried on by the Washington group. Representatives tried out the nominating technique at a pre-flight school to determine whether those characteristics mentioned by combat aviators which did not refer to pilot skill could be identified early in training. The results suggested that attributes like leadership and teamwork could be judged by fellow cadets although there was no guarantee that these judgments would agree with those made when these men reached operational flying. In another study, the extreme groups identified by the nominations of combat pilots were compared in terms of their

athletic records, as a corollary to the basic research on the validity of test scores, age, and other possible predictors of combat proficiency. Such subsidiary investigations, carried out at the request of another Bureau, illustrate the service function of the Aviation Psychology Branch and indicate that administrative boundaries did not restrict its areas of usefulness.

Validation was not the only technical responsibility of this central research group. It also developed and standardized new tests. It exchanged information with the Army Air Forces testing program so that each psychological service could benefit from the work of the other. The section checked the accuracy of scoring done in the field and maintained card files for record and research purposes. Statistical breakdowns of attrition data gave the frequency of various reasons for failure as well as the relative ability of the tests to predict each type of failure. The different parts of the selection battery were correlated with age, education, previous flight training, and other relevant factors. It was the responsibility of the Aviation Psychology Branch to make such administrative recommendations as the results of these analyses warranted.

Other Services. Just as the members of the field organization inevitably became associated with duties outside the scope of their initial function, so the Washington group found itself devoting proportionately less attention to pilot selection tests because of the steadily increasing number of requests for help on other problems. Undoubtedly, this shift of emphasis resulted in some neglect of the selection program in which there was always considerable room for improvement. However, since by that stage of the war it took as much as two years for an accepted applicant to reach combat operations, perhaps the concern with more immediate problems was justified.

A battery of selection tests for flight instructors was established on the basis of research carried out by this central research group with the collaboration of the field service organization. In this study, several criteria were tried and found wanting. For example, while the proportion of each instructor's students completing training is a clear cut datum which would seem to be a useful criterion, inadequate records and small samples made it undependable. The composite criterion finally selected was based primarily on the rating of those who had the best chance to observe the instructor's performance, namely his students, and secondarily upon inspectors who checked the work of each instructor. Using extreme groups, it was possible to derive scoring keys which stood up under cross-validation. The validated measures were not intelligence tests but rather questionnaires regarding preferences for assignments and attitudes toward instruction.

The group was asked to help select Link Trainer instructors, control tower operators, and nonpilot navigators. In one case, the required numbers were so small that exact validation would not have been economical or statistically reliable and recommendations had to be based upon technical experience with similar groups. In other cases, it was possible to validate selection measures against outcome in short training courses.

There were other projects in the field of training. An example of cooperative research where the Washington group worked with officers in the field can be found in the evaluation of the Link Synthetic Flight Trainers. The question was whether this device could be used as a training aid to save flight time. The experimental design was set up by the Aviation Psychology Branch in conjunction with cognizant Navy Department officers, and an H(S) officer was assigned to the field station where the project was carried out. His responsibilities included setting up the experimental and control groups, assisting in the compilation of the records, and watching for the unwitting introduction of extraneous influences upon the data. In a project requested by the Naval Air Training Command, correlations were run between test scores and grades on specific flight maneuvers. The Washington group was also asked to set up and conduct an experiment to determine the relative value of two synthetic gunnery trainers. It is perhaps typical of the difference between wartime improvisations and precise experimental designs used in pure research that the task was complicated by the lack (at that time) of any dependable measure of gunnery proficiency.

The Aviation Psychology Branch was called upon to apply quantitative methods to nonpsychological problems. Thus a Bureau medical officer enlisted help in making a statistical evaluation of the effectiveness of oxygen indoctrination. A second medical project was the intercorrelations of various meas-

ures of cardiovascular efficiency with each other and with age. Again, in cooperation with the cognizant section in the Division of Aviation Medicine, the Branch developed a record form for the flight physical examinations which was adapted for the IBM test scoring machine. It made possible the rapid check of each completed blank to determine whether it required detailed consideration by the reviewing officer and also enabled the ready compilation of distributions by the use of the graphic item counter. The Psychology Branch was also called upon to review the experimental design and the statistical treatment of data in a wide variety of reports reaching the Division.

Another example of the extension of the Branch's services to the review of experimental design was the assignment of the first psychologist to the Office of Research and Invention of the Navy Department. His function was initially the review of the experimental designs for research proposals to be carried out under Navy contract. Through the efforts of two members of the Branch who had additional duty in OR&I, an informal Intra-Navy Personnel Research Committee was established to evaluate these proposals and to coordinate the efforts of the several Naval groups performing psychological research.

These papers on Naval Aviation Psychology would be incomplete if they did not call attention to what the psychologists themselves gained from their military experience. The contrast between actual statistical findings and theoretical expectancy left a marked impression on them. Here was a rare opportunity to apply statistics to data from much larger groups than the usual laboratory samples. It was commonplace to observe that, for several populations that were apparently homogeneous in every relevant particular, different values would be obtained which varied beyond the bounds set by familiar expectancy measures. This H(S) group returned to their peacetime work with a healthy skepticism about the stability of any findings based on populations of two or three hundred cases.

Another lasting lesson was the necessity for more attention to criteria. Psychologists have been so much preoccupied with the immediate task of constructing reliable measuring devices that they have often slighted the criterion itself. It was the experience of the aviation group that constructive efforts to improve the reliability and the significance of criterion measures deserve at least as much attention as that given to the predictor itself.

Wartime psychologists also learned much about the communication of facts and findings to lay personnel. Considerable skill is required in stating the administrative implications of an r of .31 ($N = 2485$) to a policy-making officer. Interpretations by means of simple frequencies or percentages and estimates of time or money saved can talk more persuasively than statistical levels of confidence or indices of determination. One simple perspective bar diagram showing the percentages of failures for various combinations of two selection tests and also indicating by primary colors those combinations with comparable percentages proved to be aviation psychology's best salesman.

In their wartime experience, H(S) psychologists learned effective methods for disseminating technical knowledge to the men who use it. It is a sizeable jump from teaching college students whose attention is obtained either by regulation or by interest to selling safety practices and oxygen or communication procedures to men who do not know that they must use the facts for their own protection. Finally, and most significant of all, this H(S) group acquired a strong conviction that psychology's knowledge, techniques, and attitude or way of thinking have many diverse applications, some of which have been unforeseen. The wartime demonstration of this fact will exert considerable influence on the postwar thinking and activities of psychologists.

REFERENCES

1. JENKINS, JOHN G. Naval aviation psychology. I. The field service organization. *Psychol. Bull.*, 1945, **42**, 631–637.
2. JENKINS, JOHN G. Naval aviation psychology. II. The procurement and selection organization. *Amer. Psychologist*, 1946, **1**, 45–49.
3. FISKE, DONALD W. Naval aviation psychology. III. The special services group. *Amer. Psychologist*, 1946, **1**, 544–548.

PROFESSIONAL FRUSTRATION IN GOVERNMENT PSYCHOLOGISTS[1]

WILTON P. CHASE

Veterans Administration, Washington, D. C.

Psychologists in the government service are predisposed to suffer from an occupational malady which can be descriptively labeled "professional frustration." This condition has become more and more apparent during the war years and occurs most often among psychologists who left university positions to enter the armed services or to accept appointments in various military and government establishments. No systematic study has been made for the purpose of collecting data to support the circumstances described in this article. However, the expressed opinions of many psychologists who have had the experience of trying to realize professional values which are often in conflict with those usually held by non-professionally trained administrative officials are the basis for explaining the condition referred to here as "professional frustration."

The typical factors which produced this condition among psychologists in the armed forces can be described as follows: Most psychologists were assigned to duties where they were responsible for the operation of various phases of the personnel programs. They were responsible in turn to administrative officers who usually had little or no understanding of the principles and techniques of personnel management, let alone any appreciation of the psychological foundations for such work. The latter were dependent upon the technically trained psychologists to develop and apply proper personnel methods. These administrators reserved, however, their prerogatives to determine policies and to approve procedures. They rightfully considered it necessary to retain the authority for determining policy because they were entrusted with the responsibility for accomplishing the mission of personnel work in the organization of the armed forces. They were conscientiously concerned with fulfilling this mission in ways which in their judgment were the most efficient, expeditious and economical. The psychologists, on the other hand, who actually instituted and performed the operations as prescribed in regulations and directives were concerned more with the welfare of the individual because their professional viewpoint is that personnel procedures are devised to effect the proper placement and management of persons. Very often this viewpoint was in conflict with what their superior officers considered to be proper because of "administrative necessity."

Psychologists who consistently failed to compromise their professional concern for individuals with the dictum of administrative necessity as prescribed by their superiors were classified as "long haired" and more often than not lost any chance for effectiveness which they might have had. Most psychologists, however, did compromise because they realized that limited progress toward achieving an ideal goal was better than none at all. They hid the fact that they were suffering from "professional frustration," and as individuals performed their duties in a most admirable manner. Because of their willingness to do the best that could be done in applying psychological procedures, as individual psychologists they were able to contribute much to the stature of psychology in the eyes of those who were responsible for the administration of the personnel programs in the armed forces. They ably used the procedures and techniques which were authorized and accepted their position as *technicians*. There was a common saying among them which aptly describes the situation in which they found themselves: "They held positions of great responsibility with little authority."

[1] The opinions expressed in this article are those of the author and are not set forth in his capacity as an official of the Veterans Administration and, therefore, approval of the article or concurrence in the statements by the Veterans Administration is not to be implied.

Across the Secretary's Desk

FAVORITE PSYCHOLOGICAL JOURNALS

For several years the APA has offered all its publications at a special club-rate to members, but now the number of journals is too great to permit selling them for the club price of former years. To secure information on desired groupings, an advisory ballot was circulated to all members last summer. Three club groups were then chosen. Approximately 40 per cent of all members subscribed to one or another of them, and a few to individual journals.

It was easy to satisfy those members who were willing to pay a higher price to receive all of the journals. Approximately 35 per cent of all club-rate subscribers chose this group.

Selecting the journals to include in other groups was more difficult. Tabulations of the rank order of preference of those people who were not interested in receiving all journals made it possible to select an "applied" journal group and an "experimental" journal group which seemed to satisfy the great majority of respondents. But most people whose first choices fell in the applied group wanted the *Psychological Review* more than they wanted some of the other applied journals. It was therefore added to the applied journals. Approximately 40 per cent of all club-rate subscribers chose this group.

Most of those whose first choices fell within the experimental group wanted the *Journal of Abnormal and Social Psychology* more than they did some of the other experimental journals. It was therefore included with the experimental journals to make up the third club group. Approximately 25 per cent of all club-rate subscribers chose this group.

The most frequent supplementary comment on the ballots was a request that each person be allowed to pick out his own five or six preferred journals. Some day that may become possible. It is not now. Allowing each person to make up his own group of five journals would allow 15,120 combinations. The 5,000 members would not be able to exhaust all these possibilities, but they would probably do their best. The detailed individual bookkeeping necessary would make the cost to the members prohibitive.

The clubs selected are those which satisfied the greatest number of members. The minority who did not find their own preferences offered may find some satisfaction in this explanation and may claim unusual or unique reading preferences.

STANDARD SCORES AND PERCENTILE SCORES

The experience of World War II demonstrated that standard scores can be used by large groups of people who lack statistical training. Army and Navy officers were taught to record test results in standard scores and to interpret such scores when they examined the personnel record cards of men for whom they were considering assignments.

The Adjutant General's Department of the Army reported scores on a scale with a mean of 100 and a standard deviation of 20. The Bureau of Naval Personnel used a mean of 50 and a standard deviation of 10. The Navy's system allows two-digit coding and avoids confusion with IQ norms.

The psychologists who introduced these scales were well aware of the common civilian practice of reporting test results in percentile terms. They took advantage of the fact that military officers were, in the main, unacquainted with percentile scores. It was possible to teach a good system without the necessity of unlearning a bad one.

Now that psychologists are mostly back in civilian clothes, those who work with tests are likely to revert to the use of percentile scores because other psychologists, school teachers, deans, and administrators are acquainted with percentile scores and find them easy to explain. Yet standard scores have so many statistical advantages over percentile scores that their use should be almost universal. Let us stop the bad practice of reporting scores on group tests in percentile terms and demonstrate that civilians are able to learn and use a scale which Army and Navy personnel learned readily.—DAEL WOLFLE

Psychological News and Notes

JAMES HENRY LEUBA, 78, professor emeritus of psychology at Bryn Mawr, died at Winter Park, Florida on December 8, 1946.

EUGENE CHARLES ROWE, 76, formerly head of the department of psychology and education at Central State Teachers College, Mount Pleasant, Michigan, died December 31, 1946. He had been a life member of the APA since 1944 and a member since 1910.

IRVING A. BARRETT was killed in action in the Pacific in July 1945. He was an associate member of the APA.

CLYDE H. COOMBS has joined the faculty of the University of Michigan where he will be assistant professor in psychology and research psychologist in the Institute for Human Adjustment. His most recent position was in the Adjutant General's Office. JOHN B. CARROLL, previously with the Aviation Psychology Division, Bureau of Medicine and Surgery, is replacing him in the Adjutant General's Office.

DANIEL BROWER is now with the Personnel Laboratory in New York City as director of psychological services.

The Council of Representatives of the American Psychological Association has elected the following people to membership on the new American Board of Examiners in Professional Psychology: MARION A. BILLS, JOHN G. DARLEY, CARLYLE JACOBSEN, JOHN G. JENKINS, GEORGE A. KELLY, DAVID SHAKOW, CARROLL L. SHARTLE, DAVID WECHSLER and F. L. WELLS.

RICHARD E. FOX, formerly director of the University of California Veterans Advisory Service, has joined the staff of the University of Colorado as an associate in education and head of the department of testing and evaluation.

CLARENCE A. MAHLER has been appointed acting chief of the newly established VA Guidance Center at the University of Colorado.

EVA RUTH BALKEN, formerly assistant professor of psychology, Division of Psychiatry, University of Chicago, is studying in London with Anna Freud.

HAROLD A. EDGERTON, formerly director of the Occupational Opportunities Service and professor of psychology at the Ohio State University, will now devote full time to teaching and research in the department of psychology. FRANK M. FLETCHER has been appointed director of Occupational Opportunities Service and assistant professor of psychology.

AARON H. CANTER has been appointed assistant in guidance in the Psychological Services Division at Teachers College, Columbia University. He had been with the supervisory staff of the Vocational Rehabilitation and Education Division of the VA.

EDWARD N. BRUSH has returned to the University of Maine as acting dean of graduate study and professor of psychology after three and one-half years in the army. He received the Army Commendation Ribbon for his work as Chief of the Counseling Branch, WD Separation Center, Fort Devens, Massachusetts.

C. ESCO OBERMANN has been appointed Director of the Vocational Rehabilitation and Education Service of the Branch 8 office of the VA at Fort Snelling, Minnesota.

LAURANCE F. SHAFFER, editor of the *Journal of Consulting Psychology*, has selected the following associate editors: EDGAR A. DOLL, WILLIAM A. HUNT, E. LOWELL KELLY, MORRIS KRUGMAN, BERTHA M. LUCKEY, FRED MCKINNEY, CATHARINE C. MILES, CARL R. ROGERS, and R. NEVITT SANFORD. The associate editors were nominated by the Executive Committee of the Division of Consulting Psychology, the Division of Clinical and Abnormal Psychology, and the Division of Counseling and Guidance Psychologists.

ARNOLD H. HILDEN is now associate professor in the recently organized Department for the Study of

Human Growth in the University of Colorado School of Medicine.

B. F. SKINNER of Indiana University has been appointed the William James Lecturer in Psychology at Harvard University during the fall term of 1947. Former William James Lecturers in Psychology were John Dewey, Wolfgang Köhler, Kurt Goldstein, and E. L. Thorndike.

The subject of Professor Skinner's ten weekly lectures will be the psychological analysis of verbal behavior. He will also offer a graduate seminar on the principles of behavior.

There have been recent changes in the department of psychology at North Carolina State College. WILLIAM MCGEHEE, formerly chairman of the department, has resigned to become Director of Personnel Research for Marshall Field and Company at Spray, North Carolina. D. J. MOFFIE will succeed him as chairman, and ALAN GRINSTED, formerly associate professor of psychology at Rhode Island State College, will join the department as an associate professor.

REBECA MILIES, professor of psychopedagogy at the Institutos Normales of Montevideo, Uruguay, has been appointed extern at the Wichita Guidance Center. Professor Milies has been awarded maintenance and travel grants by the U. S. Department of State, through the Institute of International Education, to study child research and service centers in the United States.

J. W. BOWLES JR. has been appointed psychological examiner at the Wichita Guidance Center.

THOMAS M. HARRIS, research fellow in clinical psychology at Harvard University and lecturer in the management training program at Radcliffe College, has joined the firm of Harris, Rust, and Hawthorne, Personnel Research Consultants, Boston.

New members of the psychology staff at Cleveland College, Western Reserve University are: ELEROY STROMBERG, RICHARD WALLEN, PETER J. HAMPTON, and WESLEY ALVEN. The department will emphasize work in vocational guidance and industrial psychology.

The Mississippi State College for Women has established a separate department of psychology. CARROLL H. LEEDS, formerly head of the department of education and psychology at Westminster College, New Wilmington, Pennsylvania, has been appointed head of the new department. Other members include: LULA STEVENS, associate professor, ALICE WILDMAN, associate professor, and NELLIE S. KEIRN, dean and vice-president of the college.

LOIS ADAMS, formerly associate professor of psychology at Pratt Institute, is now with the VA Guidance Center at the Polytechnic Institute of Brooklyn.

ROBERT S. SACKETT has joined the staff of the Psychology Section, Missile Control Division at the Naval Research Laboratory, Washington, D. C. Formerly he was associated with Edward Howard and Co., Cleveland, Ohio, as an advertising and public relations consultant.

GORDON L. MACDONALD, formerly counselor with the Occupational Opportunities Service of the Ohio State University, is now assistant professor of psychology at the University of Toledo.

N. HENRY PRONKO has been appointed acting head of the psychology department of the University of Wichita.

J. LEWIS YAGER has accepted an appointment as clinical psychologist at Vaughan Hospital, Hines, Illinois.

HERBERT S. LANGFELD, Princeton University, has been appointed Permanent Secretary of the International Congress of Psychology to fill the vacancy created by the death of Professor Edouard Claparède.

C. GILBERT WRENN, professor of educational psychology at the University of Minnesota, has received the Bronze Star Medal from the Navy. His citation reads in part as follows: "For meritorious service in connection with operations against the enemy while attached to the Staff of Commander Service Force, U. S. Pacific Fleet . . . serving as Personnel Officer of the Advanced Base Section . . . he skillfully established new procedures and methods

and selected and trained officers and men to carry them to completion."

The Minnesota Psychiatric Institute, organized in 1946 by Dr. ERIC KENT CLARKE, chief psychiatrist of the Manhattan Project at Oak Ridge, Tennessee, announces that RAY H. BIXLER has joined their staff. Drs. STANLEY G. LAW and WILLIAM FLEESON, associates of Dr. Clarke at Oak Ridge, joined the staff last July.

Last November L. L. THURSTONE of the University of Chicago gave a series of four lectures to a group of men interested in market research and advertising. The purpose of the lectures was to describe the application of psychological measurement methods to the study of market research and consumer preference problems. The final lecture of the series was given before a joint meeting of the American Statistical Association and the Illinois Market Research Association.

The members of the executive council of the Minnesota Society for Applied Psychology are: STARKE HATHAWAY, CLIFFORD JURGENSEN, JOHN G. DARLEY, CORNELIA D. WILLIAMS, and LINDSEY R. HARMON.

HENRY P. BIRMINGHAM, THOMAS G. HERMANS, ALSTON S. HOUSEHOLDER, WILLIAM E. KAPPAUF, and FRANKLIN V. TAYLOR received Development Awards from the Bureau of Ordnance for their research on lead-computing gunsights. They were members of Project N-111 under the Applied Psychology Panel.

GRACE RUBIN-RABSON has published an article, "Psychological Counseling," in *Hygeia*. It is suitable for the layman and explains the various functions of the neurologist, the psychiatrist, and the psychologist. Reprints are available from Dr. Grace R. Rabson, 2440 Fairfield Ave., Ft. Wayne, Indiana, for any psychological or other reputable group that might find them useful.

A conference will be held at the University of Pittsburgh, March 5–6, on recent developments and probable future trends in seven fields of psychology. The speakers will be: CARL ROGERS, B. F. SKINNER, E. LOWELL KELLY, RENSIS LIKERT, JOHN C. FLANAGAN, ROBERT SEARS, and CLIFFORD T. MORGAN.

The conference is intended primarily for psychologists and for graduate students of psychology. There will be no charge for attendance, but admission will be by ticket only. Requests for tickets, addressed to the Department of Psychology, University of Pittsburgh, will be filled in the order in which they are received.

The Inter-Society Color Council will hold its sixteenth annual meeting February 24–25 in New York City. For information write P. O. Box 155 Benjamin Franklin Station, Washington 4, D. C.

The U. S. Civil Service Commission has established a Committee of Expert Examiners to aid in developing an examination for research psychologist positions in the Federal Service. LOUIS M. HEIL, CLYDE H. COOMBS, and ANTHONY C. TUCKER represent the War Department, DAVID G. PRICE, ALSTON HOUSEHOLDER, and HARRY OLDER the Navy Department, and JOSEPH M. BOBBITT and ALBERT H. ARONSON the Federal Security Agency. L. L. THURSTONE and JOHN G. JENKINS are consultants.

The Department of State announces that grants providing travel and maintenance will be awarded to candidates for study in other American republics. The candidates must have the bachelor's degree and must be engaged in graduate work. Preference will be given to projects on the basis of merit and with reference to their usefulness in the development of broader understanding between the United States and other American republics. Applications can be obtained from the American Republics Section, Division of International Educational Relations, U. S. Office of Education, Federal Security Agency, Washington, D. C. They should be returned not later than March 1, 1947.

The Test Division of the Psychological Corporation has in operation an installation of IBM punch card equipment which is available at moderate cost to psychologists or graduate students with appropriate problems.

The Veterans Administration Vocational Advisers Association of Chicago, HAROLD L. DUNSKY, chairman, extends an invitation to VA training officers, appraisers and other workers in the field of psychology to become affiliate members. Dues are one dollar a year. Meetings are held monthly. Further information can be obtained from Dr. Saul Kasman, 4355 South Sawyer Ave., Chicago 32, Illinois.

Applications to the National Research Council Committee for Research in Problems of Sex for financial aid during the fiscal year beginning July 1, for work on fundamental problems of sex and reproduction, should be received not later than April 1. They should be addressed to the chairman, Dr. Robert M. Yerkes, Yale School of Medicine, New Haven 11, Connecticut. Although hormonal investigations continue to command the interest and support of the committee, preference, in accordance with current policy, will ordinarily be given to proposals for the investigation of neurological, psychobiological, and behavioral problems of sex and reproduction.

The Connecticut State Hospital, Middletown, Connecticut, announces a vacancy in the Psychological Laboratories, under the supervision of Jules D. Holzberg. The salary will be $2520 to $3240. Full maintenance at the hospital may be provided at a deduction of $316 per year. An individual with an MA and clinical experience is preferred. Applications should be submitted to the Superintendent of the Connecticut State Hospital.

The Kansas State Receiving Home for Children, Atchison, Kansas, announces an opening for a consulting psychologist. The position involves diagnostic work with delinquent and behavior problem children. Although a woman is preferred, anyone qualified will be considered. The PhD in psychology is required and clinical experience is highly desirable. The salary range is from $3000 to $4800, depending on individual qualifications. Anyone interested is invited to apply to Robert C. Kammerer, Director, Kansas Receiving Home for Children, Atchison, Kansas.

The George Washington University, Washington D. C., is looking for summer school instructors in several fields of psychology. Instruction is for a seven-and-a-half-week term beginning either on June 2, or July 24. Interested persons should write Dr. Thelma Hunt, Executive Officer, Department of Psychology.

The Guidance Center of the Bureau of Mental Hygiene, Houston, Texas announces an opening for an assistant clinical psychologist. Interested persons should write to Mrs. Mary L. Rothschild, Chief Psychologist, Guidance Center, Bureau of Mental Hygiene, 304 McIlhenny, Houston 6, Texas.

The Bureau of Maternal and Child Health, Madison, Wisconsin, has an opening for a Psychologist III. Applicants must have a BA, some graduate work, and three years experience in clinical psychology, at least two of which have been in child guidance work. The salary is from $260 to $310. Applications can be obtained from the Bureau of Personnel, Madison 2, Wisconsin.

Farragut College has positions available on the teaching staff of the department of psychology, and on the staff of the Farragut College Guidance Center. Inquiries should be addressed to Dr. I. A. Fosberg, Assistant Personnel Director, Farragut College, Farragut, Idaho.

The U. S. Civil Service Commission announces examinations for the positions of Clinical Psychologist and Research Psychologist. Clinical Psychologist positions will have a salary range from $4149 to $7102. The salaries for Research Psychologist range from $4902 to $9975. Applications for the Clinical Psychologist and Research Psychologist examinations will be accepted until further notice by the Civil Service Commission. Some Research Psychologist positions will be filled immediately. Persons interested in these positions should apply at once. Information and application forms may be obtained from most first- and second-class post offices, from Civil Service regional offices and from the U. S. Civil Service Commission, Washington, D. C.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 March, 1947 Number 3

In this Issue

History of Psychological Studies of the Design and Operation of Equipment: WILLIAM E. KAPPAUF 83

Psychology at the Naval Research Laboratory: FRANKLIN V. TAYLOR 87

Psychological Research on Equipment Design in the AAF: PAUL M. FITTS 93

Tests Used in Veterans Administration Advisement Units: GERTRUDE BAKER AND JOHN GRAY PEATMAN 99

The Calibration of Test Items: L. L. THURSTONE 103

Comment 105

In Defense of Military Psychology: HARRY J. OLDER 105

Notehand for Psychologists: W. S. TAYLOR 106

Across the Secretary's Desk 108

Psychological Notes and News 110

Convention Calendar 116

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect

DONALD G. MARQUIS
University of Michigan
Ann Arbor

Recording Secretary

HELEN PEAK
Connecticut College
New London

Treasurer

WILLARD L. VALENTINE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Executive Secretary

DAEL WOLFLE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT
EDWARD C. TOLMAN
JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

HISTORY OF PSYCHOLOGICAL STUDIES OF THE DESIGN AND OPERATION OF EQUIPMENT[1]

WILLIAM E. KAPPAUF

Princeton University

WHEN the Army and Navy recruited psychologists early in the war, assistance was sought primarily in the areas of selection and training of personnel. Accordingly a great number of psychologists became engaged in programs which, as described in part in previous issues of this journal, involved the validation of selection and classification tests, the preparation and validation of various types of training aids, and the coordination of new tests or training procedures with those already in use.

At the same time a few research programs sought the services of psychologists to insure the more satisfactory design of some items of military equipment, to insure design which would take account of particular psychological and physiological characteristics of human operators. Typical of this work was that which was initiated in the design of dark adaptation goggles, sun scanning devices, and communications equipment. As the war progressed this phase of research in applied psychology assumed greater and greater importance and involved more and more types of equipment. The field developed as much through the initiative of individual psychologists as it did through specific service requests. In many cases psychologists who had been requested to prepare new training materials or training bulletins found previous operating instructions incomplete or unstandardized. Specific study and research was required to elaborate the old procedures or to demonstrate the relative merits of alternative methods of operation. With service approval, psychologists conducted such research and then incorporated the indicated procedural changes in the training bulletins or training programs which they were developing. But having extended the field of their work from "how to teach" to "what to teach," many psychologists found it inevitable that their thinking turned to equipment design as it related to efficient operation. Increasingly, contributions were made to the solution of design problems. The effectiveness of these early studies of design led the services to request their continuation and extension.

Of course, none of these areas—selection, training, equipment design and operation—was distinctly new to the psychologist. These had been central problems in the field of industrial psychology for many years. What was new, however, was the more general acceptance of the principle that operating procedures and equipment design should be established on the basis of sound psychological data.

In number, the military problems of design and operation were many. This was most certainly the result of the recent rapid strides which had been made in the technological design of equipment. Engineering developments had outstripped the rate at which the engineer could adapt his equipment to efficient human use. To the psychologist the field was a rich and challenging one. As evidence of his interest one may note the many names he applied to describe his work: *human engineering, biomechanics, psychological problems in equipment design, the human factor in equipment design, applied psychophysics, systems research.* Further evidence of the importance which participating psychologists

[1] This article and the two which follow it were written at the request of the editor. They illustrate a type of psychological work—an applied experimental psychology—which gained new importance during World War II and which is continuing in the post-war period. The three articles illustrate the type of work being done but do not describe all aspects of it.

In addition to the programs described by Taylor and Fitts in the two following articles, others have developed in the Special Devices Division of the Office of Naval Research and in the Naval Medical Research Institute. In order to supplement their own research facilities, the military services have contracted with a number of universities for psychological research on problems related to those discussed in these three articles. DAEL WOLFLE

attached to this work is found in the fact that special sessions were given over to problems of equipment design and operation at two major meetings of psychologists immediately after the close of the war.[2]

Studies of operation and design problems typically followed a pattern familiar to those acquainted with similar industrial work. Some problems were handled on a thorough-going research basis until the best procedure or the best design and arrangement had been experimentally determined. Others were handled as adequately as possible on the basis of facts or principles already available in the psychological and physiological literature. Although there was no fundamental difference in approach or method between military and industrial research, certain distinguishing features of military job situations changed the emphasis or plan of the work to an appreciable extent. At least two of these are worthy of mention.

In the first place, a high proportion of military jobs are such that continuous precision or continuously acceptable performance is required. These jobs resemble laboratory pursuit meter tasks but have the consequence that failure to maintain continuously precise operation may mean loss of life or failure to accomplish a mission. In this respect, many military jobs have few or no counterparts in industry where quality or precision often reflects only a worker's finishing touches or his final skill in bringing a piece of work within a required tolerance. In radar scope interpretation, tracking a target, and other military jobs, it is the continuity of performance that is important. This makes it necessary for the psychologist to pay particular attention to studies of changes in job performance over very short as well as over long time periods.

In the second place, the demand for speed of operation is extremely pressing in military work. For this reason speed becomes a primary criterion in evaluating operating procedures and design arrangements. It is necessary that all operational shortcuts which do not interfere with the maintenance of continuously accurate performance be perfected and made standard practice.

[2] Joint Army-Navy-OSRD Conference on Psychological Problems in Military Training, August 15–16, 1946. Meeting of the Military Psychology Section of the APA, November 27–28, 1946.

Another feature of the war research program which psychologists found different from the usual work in industry was that they were invited with increasing regularity to participate in discussions and tests of equipment which was not yet in production but which was still in preliminary design or pre-production form. Increasingly, even though slowly, their jobs changed from that of doctoring or rearranging old equipment so that it might be operated with greater success, to that of constructive criticism and study of new devices and weapons. This trend produced a real increase in the efficiency of the production and testing programs. Design from both the technical and operational points of view was considered in a coordinated manner. To be regretted only is the fact that this approach to equipment development was not achieved at an earlier date and with reference to more types of equipment.

Projects concerned with psychological research on equipment were organized under the Applied Psychology Panel and under a number of other divisions of NDRC. The specific directives of these projects varied but some of them were sufficiently broad to include a full range of problems—research on the design of equipment, research on procedures for operating equipment, the development of selection and training procedures, the preparation of training materials in the form of pamphlets and training aids, and, when expedient, the initiation of more fundamental research on psychological factors basic to equipment design and use. General directives of this sort made it possible for projects to organize broad programs of research directed at all aspects of the operating and training job.

In an enviable position, so far as research opportunities were concerned, were those few projects to which newly engineered equipment was made available for study. This equipment was often provided for testing just as soon as a development laboratory or a manufacturer had turned out two or three pilot models. Typical of these projects was one with which the author was associated.[3] This project was organized to investigate psychological problems in the design and operation of new

[3] Project N-111, Applied Psychology Panel. Personnel included: Henry Birmingham, Clarence Graham, Thomas Hermans, Milton Horowitz, Alston Householder, William Kappauf, William Lambert, Henry Meyer, Franklin Taylor.

antiaircraft lead computing gun sights and gun directors. The program was sponsored jointly by the Office of the Commander-in-Chief, the Bureau of Ordnance, and the Ordnance and Gunnery Schools at the Navy Yard, Washington, D. C. Through this combined sponsorship, the project enjoyed the strongest support and assistance. A continuous personal and first-hand interest in all aspects of the equipment problem was shared by the several members of the sponsoring groups.

The project was set up in association with the Ordnance and Gunnery Schools. One section of these schools had the responsibility of training maintenance personnel for fire control equipment. At the time that the project was organized, this school was designated to receive at least one experimental model and at least one pre-production model of each new fire control device. These instruments were regularly available to the research project for study and test. Although the amount of research time on the equipment and the number of subjects that could be obtained were usually limited, the work of the project had the important advantage of timeliness. Team operating procedures were tested and developed on the experimental model of each device. Teams were drilled and timed in the use of these procedures. Design inadequacies which hampered swift and efficient operation were made the subjects of reports to the cognizant Navy groups. In most cases these design comments were submitted at such a time that they could be given full consideration by production engineers before the device was put in final production form. When a more detailed investigation of some design problem seemed necessary, the research was planned jointly by the project and liaison groups and then undertaken by the project.

Two steps were taken to insure the indoctrination of Naval personnel in effective methods of operating the new equipment. Under the direction of the Office of the Commander-in-Chief, the project supervised the instruction and drill of special training teams. These teams learned the operating procedures which had been developed through project study. They were then assigned to special duty at training stations or with fleet units where they were responsible for training new crews in the approved techniques. To supplement and assist the work of the training teams, the project, in cooperation with its liaison groups, prepared pamphlets describing the best operating procedures and outlining practical methods of training men as operators.

The specific accomplishments of the research project during its year and a half of work included an evaluation of the design and operating characteristics of eight different gun director systems, the preparation of detailed operating procedures for six of these systems, the study of several synthetic trainers intended for use with these directors, and the investigation of a number of psychological problems relative to the use of these systems. The latter included a study of methods of rating operator performance on the equipment, an analysis of operator learning curves under different tracking conditions, an experiment on the design of tracking reticles, and a determination of the accuracy of unaided visual range estimation on aerial targets.

Now that peacetime research programs are being set up by the services, one may well inquire into the lessons learned from the work and organization of projects like the one just referred to. The two papers following this develop the specific plans of two service groups for the continuation of psychological research on military problems of equipment design and operation. For these and similar programs, there may be merit in listing some observations on factors which made for success in wartime projects. It will be desirable, in this regard, to distinguish between what will be called specific research, dealing with very specific instruments or devices with a singular use or purpose, and more general research, dealing with devices common to many work situations or purposes.

First it should be noted that there was considerable economy and increased efficiency in specific research when all phases of that research were carried out by the same group. It is readily seen that the problem of equipment operation and the problem of equipment design should be handled by a single group because they are really but a single problem. Both are aspects of the task of fitting a job to a man. To deal effectively with either, a psychologist needs the same background knowledge and the same research skills, and must use the same criteria. But it is also true that when a particular research group has concluded an analysis of operating problems it has thereby acquired the best possible background

for undertaking the supervision of the training program involving the same equipment. This suggests the value of unified group work in the study, development, and introduction of new devices.

Another fact which war research work made readily apparent was that when specific research is required, it is imperative for the psychologist to study in detail the basic engineering and functional characteristics of the device. It is also necessary that he become completely familiar with any current doctrine which might apply to the operation or use of the gear. Thus, the psychologist who becomes engaged in research on operating procedures and equipment design for particular devices ought to be about fifty per cent engineer. He must be willing to dig into gadgets and learn what makes them tick. Then he can talk intelligently to production engineers and ordnance personnel about the equipment and, what is more, he can plan his research and state his results in terms of the functional characteristics of the equipment.

Because of the need for equipment analysis and because of the varied types of research problems which arise, a research staff usually functions more efficiently if it combines a wide range of talents and if its personnel represents a cross-section of a number of scientific fields. One reason why laboratory-trained psychologists frequently did so well in handling war problems was that their training had been well distributed in other scientific fields. By the same token, a balanced staff for any permanent research organization is implied.

War research also showed the importance of the criterion of operator acceptance of new equipment or procedures. No matter how satisfactory a design or procedure may seem as evaluated by other criteria, it has little value if service personnel reject it. Reasons for rejecting a recommended device or method are many: feelings of personal discomfort, biases established through previous training, rumored ill-effects of operation or use. It is well, therefore, to introduce tests of operator acceptance early in any equipment program. In fact, developmental work in cooperation with small groups of operating personnel is highly desirable. The end product, ready for field trials, then already bears a tentative stamp of user approval.

In conclusion, it should be pointed out that wartime research groups bequeath to permanent research units a number of organizational problems in their applied work. That these have been anticipated as continuing problems will become clear in the articles by Taylor and Fitts which follow. One of these problems is that of level of validation. Should validation be made on the basis of full scale field trials, simplified field trials, performance in simulated action situations, or performance in isolated tests of unit operations? This problem was ever-present in the work of psychologists during the years of the war and the solutions adopted were often expedients which will not suffice in more rigorous research programs. Level of validation remains a matter of concern in every experiment on equipment design.

Then, too, there is the need of establishing more satisfactory ways of analyzing group performance and of setting up criteria and standards for measuring group performance. Service units are for the most part teams rather than individuals. This means that group coordination must be brought under more careful study. Only when coordination or teamwork is adequately measured can use be made of appropriate group criteria in evaluation tests of new equipment or operating procedures.

Decisions must also be made on the level of generality or specificity of research. A program of specific research, seeking answers to specific questions about particular pieces of equipment, is the more practical program when particular devices have been decided upon as the ones needed and when the time for research is limited. If, on the other hand, one's only guide is a set of general plans for future equipment development and there is time to explore features which might be shared in common by many work situations, then more general research can be planned. Results can be stated in a way which will make them useful in the later design of elements or units in many and various kinds of devices. Research which is less specific appeals to the psychologist because it fosters the development of a more organized body of psychological knowledge. But at the same time no small factor in his preference for general purpose research is that he may carry it out in the expectation that the results of his work will not be limited in application to national preparedness for war, but may see continuing use in the design of devices and materials for peaceful living.

PSYCHOLOGY AT THE NAVAL RESEARCH LABORATORY

FRANKLIN V. TAYLOR[1]

Psychology Section, Radio Division #3

Naval Research Laboratory

THE Psychology Section at the Naval Research Laboratory is a direct outgrowth of NDRC Project N-111. At the close of the war Dr. R. M. Page, head of the Radio Division #3, invited members of the project to join the permanent staff of the Naval Research Laboratory to continue the NDRC work on an expanded basis. Three members of the group transferred to the division on October 1, 1945 and started the work of the Psychology Section. Since that time the Section has grown to fifteen members and plans are laid to expand the Section by at least six more.

At present, this research group is the only psychological group at the Naval Research Laboratory and is one of the two psychological agencies under the Office of Naval Research. The other organization, which is directed by Leonard C. Mead, is the Human Engineering Section of the Special Devices Center.

The Naval Research Laboratory is located in Bellevue which is a part of Washington, D. C. A branch laboratory is located in Boston, Massachusetts and a field station at North Beach, Maryland. The Laboratory is best known for its work in electronics, though divisions representing other areas of research are growing and will assume a much more important role in postwar research.

PROGRAM

Though the Psychology Section is administratively a part of the Radio Division #3, it is intended that the Section will grow to serve all divisions in the Laboratory. This means that eventually the Section will carry on work relating to radar, sound, and optical instruments in addition to research relating to missile and fire control problems which are in the domain of the parent division. The Section has already acted in a consultng capacity on a number of problems originating outside of its own division. These have been concerned most frequently with problems relating to the clarity of radar images on cathode ray tubes, though service has been rendered on problems involving radio direction finding and sonar displays.

However, until such a time that the Section can obtain sufficient personnel to permit expanding research into the other fields represented at the Naval Research Laboratory, its main work will be directed along the following three lines: the design of gun fire control and missile control instruments from the point of view of ease and efficiency of operation; the design and evaluation of synthetic gunnery and missile control trainers; and basic psychological research. Each of these areas will be described separately.

GUN FIRE CONTROL AND MISSILE CONTROL INSTRUMENT DESIGN

As is pointed out by Kappauf in an accompanying article, the armed services recognized early in World War II the need for a more careful consideration of the role of the operator in the design of fire control instruments; since fire control devices frequently failed to direct gun fire with the accuracy which was expected from the mathematical and mechanical characteristics built into the equipment. Much of the inaccuracy was traced to faulty operation which was often due to poor design of the controls. One of the tasks of the Psychology Section is to de-

[1] The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

sign control equipment with a view to assisting the operators in their difficult task.

Special Problems in Fire Control Instrument Design

Psychological work on fire and missile control instruments differs in certain significant ways from traditional industrial psychology and from "human engineering" as applied to nonmilitary devices. In some cases these differences serve to distinguish all military instrument design research from its civilian counterpart but in other cases the special problems are intrinsic to the fire control task and the equipment devised to accomplish the task. The first two problems described below are general to all military instrument design research. The last problem represents a special characteristic of fire and missile control apparatus.

1. *Mechanical Complexity.* The psychologist working on the design of military devices faces a mechanical complexity seldom met with in civilian industrial psychology. This mechanical intricacy stems from military urgency. During war, planes must fly, bombs must be dropped with accuracy, and air attacks must be repelled. These events cannot be postponed until military apparatus has been refined, simplified and "foolproofed". When the enemy is attacking it is necessary to employ the best countering weapons in existence. Often these "best" instruments are far more complicated electronically and mechanically than would be tolerable in the commercial world.

Mechanical complexity imposes a very real obstacle in the way of the military design psychologist. In order to be of greatest value to the military organization which he serves, the psychologist must understand the mechanics and construction of the devices with which he is working. He must be familiar with all of the functional elements in the equipment, he must know how these elements work in combination, and he must know the result of casualties to the parts. These things, it must be emphasized, he must know in fact and not merely in theory.

Since the design work of the Psychology Section is applied to gun and missile aiming systems; the psychologists in our organization must be willing to "get inside" these devices. The simplest of these mechanisms consists of a handlebar tracking arrangement upon which is mounted a lead-computing gun sight. The target is tracked by an operator who observes through the sight either the optical image of the target or its radar image. The operator turns the director by holding the handlebars and walking around the supporting pedestal; he elevates the sight by pushing forward or downward on the handles.

Below decks, a second operator handles the radar controls. Once the radar is on target, range is fed automatically through mechanisms in the director pedestal to the gun sight. On the basis of this range information, angular tracking rate and other quantities are fed into the sight, the proper lead angle is generated, and aiming information is transmitted electrically to the power drives of the guns.

The larger gun director systems involve power driven turrets manned by crews of five to seven men. The target is tracked optically by one or two men or by radar either manually or automatically. The missile control systems which are projected will contain automatic tracking devices but the problems of acquiring targets and taking over the control of the missile will require operator adjustments of considerable complexity.

It should be apparent from the description of these systems that considerable time and effort must be invested by the psychologist in learning the mechanical intricacies of the devices before he is competent to deal with them on an engineering basis. This investment must be made, however, in order to be of greatest service to the fire and missile control designers.

2. *Knowledge of Doctrine.* In addition to an interest in mechanical and electronic devices, the psychologists who work with military instrument design must also possess a willingness to acquire a fund of complex military doctrine. Since the operation of a new instrument will depend upon current military rules and practices, the design psychologist must be thoroughly familiar with battle doctrine. In the field of fire control this means that a knowledge will be required of standard primary, secondary, and emergency firing procedures; safety rules; methods of obtaining and transmitting information concerning possible targets; and a host of miscellaneous practices relating to the contingencies of shipboard operation.

3. *Precision Operation.* The first two problems described above are quite general and apply to

aviation psychology as well as to fire control research. They represent fields of interest or knowledge which differentiate psychologists working in any type of military engineering design from those in traditional industrial psychology. However, a characteristic of psychological research in the field of fire control which belongs in quite a different category is the matter of the high precision task required of the operator. In industry and in many military tasks the operations required are a series of simple motions arranged into complex sequences which are repeated frequently. The major aim of psychologists working with this class of actions is to eliminate as many of the component responses as possible and to speed up all others.

The actions called for in fire control operation are of a different sort, however. The major task of a firecontrolman is the tracking of targets. Though the responses required in target tracking are simple, they must be performed with great accuracy and sometimes for long periods of time. The delicacy and precision required of tracking adjustments presents the psychologist with new problems not ordinarily met with in industrial psychology, and for which the standard research methods of job analysis and time and motion study are quite inappropriate. One of the tasks of the members of the Section is to devise fitting methods for research in this area of human response.

Design Research

The ideas behind the design modifications made by the Section originate in research. This research may take the form of field studies or of systematic experiments performed in the laboratory.

Field research, being the more difficult of the two procedures, is used only when absolutely necessary. Field studies are called for when a redesigned fire control system is to be tested, when alternative operating procedures are to be compared or, in short, whenever it is necessary to test the overall operation of large pieces of equipment under realistic conditions. The great difficulty with field studies arises from the fact that the number of variables which must be controlled or ruled out through randomization is very large. The necessity of equalizing weather conditions, real target courses, operator experience, and a host of less important varibles makes psychological field research on fire control equipment a technique to be employed only as a last resort.

Design research done in the laboratory differs only in its orientation from traditional experimental psychological research. Whenever necessary, targets are simulated mechanically or electronically, and records of response are obtained by standard photographic or kymographic means. At present the Section is engaged in determining the best design for a tracking control mechanism. The following problems are being investigated with a device which simulates electronically the horizontal component of aircraft target motion and which records tracking error and tracking rates:

(1) The accuracy of tracking with joy stick versus pistol grip controls.

(2) The effect of different variable and constant aiding ratios on the accuracy of joy stick tracking.

(3) The effect of different sensitivities upon the accuracy of joy stick tracking.

(4) The effect of different relationships between the direction of motion of the joy stick and the resulting apparent target motion on the accuracy of tracking.

(5) The effect of different amounts of damping and inertia upon the accuracy of tracking.

When these studies have been completed and the apparatus has been modified to include the elevation as well as the azimuth component, further research will be carried out along the following lines:

(1) A comparison of the accuracy of two men tracking in tandem with that obtained with one man tracking in elevation and the other tracking in azimuth.

(2) A comparison of two man versus one man tracking with various types of control mechanisms.

A second device containing a target-simulating mechanism is being constructed for the purpose of testing under more or less realistic conditions the findings obtained in the studies listed above. The device is a power-driven, dummy director mounted on a platform which can be made to roll and tilt in simulation of ship motion. The device is being built to accommodate different types of tracking controls, and the control circuits will be arranged to allow a wide variation in control sensitivity, nature of aiding, and aiding ratio. Both of these devices are to have target mechanisms which will allow a

sufficiently wide variation in target speed to simulate both ordinary aircraft and high speed missiles.

DESIGN AND EVALUATION OF SYNTHETIC GUNNERY TRAINERS

The second major area of work in which the Psychology Section is engaged is the evaluation of existing gunnery trainers and the development of new synthetic fire control and missile control training instruments. The Section will confine itself to trainers for seaborne fire and missile control instruments since the Human Engineering Section of the Special Devices Center is charged with the evaluation of all other types of Navy trainers.

The U. S. Navy spent several millions of dollars on training devices during World War II. In many cases these devices were not validated before going into production. It is at least possible that many of these instruments were worthless as trainers and, conceivably, some may actually have taught incorrect habits so that the subsequent learning of the proper habits was more difficult than it would have been if the trainer had not been used. Fully realizing the seriousness of this situation, the Bureau of Ordnance has requested the Psychology Section to undertake evaluative studies on all of the gunnery trainers under the bureau's cognizance and to attempt to improve them if this is found necessary. This bureau has also requested that the Section develop additional gunnery trainers to accompany the newer fire and missile control systems.

Trainer Design

A number of different purposes may be served by instruments called trainers. A trainer may be used in the following ways: (1) for the purpose of demonstrating a complex task; (2) as a device for improving skill; (3) as a practice instrument to maintain skill once it has been acquired; and (4) as a selecting instrument.

Unfortunately, it is not recognized by many of the engineers who design trainers that each of these four trainer uses requires instruments of slightly different design. Rather, it is assumed that devices built for one of the purposes can be used as effectively for others. This assumption is certainly not always true. In fact, it is only in the most exceptional cases than an instrument which has been designed as, say, a demonstrator will at the same time be valid as a selection device or as an instrument for building up or maintaining skill. This is a result of the fact that different psychological requisites underlie the four trainer uses.

A gunnery trainer intended for use as a demonstrator would be expected to present highly realistic target courses and deliver a "realistic" score (on the average, two per cent hits for skilled trackers). On the other hand, a trainer intended for developing skill would have courses of varied difficulty and would have its scoring system so adjusted that the scores would differentiate between skilled and unskilled trackers. Such an adjustment would result in scores far higher than the "realistic" scores of the demonstrator. If instead of demonstration or skill building, the purpose of the trainer is to maintain tracking skill once developed, it will have to present many more target courses than the demonstrator (to prevent memorization over long periods of time), and the courses themselves will have to represent a high level of difficulty. Finally, if the trainer is to be used as a selection instrument, the scores must be so adjusted and the courses so chosen that the trainer discriminates between those of high and low tracking ability at an early stage of learning.

This example should make it apparent that the characteristics of a trainer must reflect the purpose for which it is designed. If it is desired to satisfy several purposes with the same instrument, the trainer must become, in effect, several trainers within one. Course cams and scoring circuits appropriate to each purpose must be built into the trainer in such a way that the throwing of a switch will energize whichever mechanism is desired. Though such a multiple-purpose trainer will, of necessity, be more complex than a trainer built for a single use, it will probably not always be necessary to have completely different course-generating and scoring systems for each of the four uses. It is quite likely that appropriate combinations of courses and scoring tolerances will serve in more than one capacity, though evidence on this matter must come from future validation studies.

It is one of the Section's most important duties to educate design engineers as to the proper design and use of synthetic fire and missile control trainers. This education is done in part through consultation and report writing but more effectively through

actually assisting the engineers in designing and constructing new trainers and redesigning existing trainers to enhance their usefulness. At the present time two Bureau of Ordnance trainers are under test and one trainer designed and built by the Section is in the process of being manufactured.

In addition to synthetic trainers the Section takes part in the design of other fire control training devices. Simple instruments which may be carried and used aboard ship for the purpose of improving the firecontrolman's skill with his equipment are particularly useful. Under this category fall visual and photographic check sights and automatic scoring devices. The Section has designed a photographic check sight to be used in evaluating the tracker's performance with a new type director. A device which automatically scores the performance of a pointer when he is tracking the radar image of a target has also been constructed. This last instrument delivers clock scores which represent time "on target" in relation to total tracking time. The scoring mechanism permits the scoring diameter to be varied from 5 to 20 mils in four equal steps.

Trainer Evaluation

The problems of trainer evaluation are well known to those who have worked with these instruments during wartime. All final validations must be conducted with several groups of subjects working over a period of many days. The investment in men, money, and materiel in full-scale validation studies is so great as to be almost prohibitive. Shortcut methods must be discovered and put to use before much of this most necessary work can be accomplished. To this end the Psychology Section is collaborating with others at the Naval Research Laboratory on the design and construction of a complex "blind-target" simulating device which will serve to simplify and speed up the work of gunnery trainer validation.

Fortunately, it is sometimes possible to learn a great deal about a trainer without performing a final validation test. Checks on the reliability of the scoring system, the realism of the courses, the simplicity of maintenance, the shape of the learning curves obtained by subjects using the device, and many other related items can sometimes serve to indicate the general usefulness of a trainer. Though such tests are not substitutes for validation studies, a trainer which fails on several of the checks can probably be considered as having relatively little value in a military training program.

Members of the Psychology Section are in the process of making pre-validation checks on two Bureau of Ordnance trainers. Suggestions previously made have already resulted in changes being introduced into two other fire control trainers.

Training Research

Besides work on the design and evaluation of specific fire control trainers and training aids, the Section conducts research on fundamental principles of trainer design. Equipment is now being assembled to test the effect of "knowledge of results" upon the speed of learning to track simulated targets. Tests will be run on naive subjects to determine the rate and extent of improvement when (1) no scores are given, (2) earned tracking scores are presented at the end of every run, (3) earned tracking scores are presented at the end of a daily test period, (4) graduated fictitiously high scores are presented after each run, (5) graduated fictitiously low scores are presented after each run.

Another study is being arranged to test the training efficacy of a buzzer indication of "on target" as compared with no buzzer signal and with a buzzer signal to indicate "off target". Other studies are also contemplated to determine learning rate as affected by the difficulty of practice courses and the nature of the instructions.

BASIC RESEARCH

One of the prime functions of a group such as the Psychology Section is the acquisition of fundamental psychological information which may be of value to psychology in the future. Such basic research is necessary in order to furnish the knowledge which subsequently may be drawn upon for specific application. A second reason for encouraging basic research at an applied psychological research laboratory is to provide the members of the research organization with the opportunity for unrestricted research and publication.

At present, all basic research studies are aimed at the eye-hand coordination problem involved in target tracking. Two fundamental questions concerning tracking relate to why trackers make errors and how, when errors are made, they are corrected.

Starting out to answer the second question first, a simple pencil-tracking instrument was devised to allow an analysis of the correction movement made when "errors" were suddenly introduced. The results of several different experiments with this apparatus show that the rate of the correction movement increases with the size of the "error" to be corrected, though the actual proportion varies with different subjects. This means that subjects tend toward a constant correction time regardless of the size of the corrections made.

This increase of rate with distance is known to hold under the following conditions:

(1) When tracking is done with either the right or left hand.

(2) When the direction of the correction is either horizontal (to the left or to the right) or vertical (up or down).

(3) When the ratio between hand motion and the motion of the pencil is either 1:1 or 3:1.

(4) When the "error" which is corrected is either "preset" or is an actual tracking error made by the subject.

It is also known that increasing the inertia of the tracking pointer results in a less pronounced increase of rate with size of error.

In addition to the analysis of error correction, equipment has recently been completed to allow studies of continuous tracking. Through the use of this device it is hoped that some insight may be gained into the reasons why subjects make tracking errors. This will involve a study of the magnitude and frequency of tracking deviations as they relate to target speed and course, nature of "set," type of control and numerous other variables. In this research freedom will be maintained to attack any aspect of continuous tracking which seems profitable, regardless of its military implications.

It is fully expected that the basic research will not long be confined to eye-hand coordination related to tracking. The Section is free to institute research in any area of experimental psychology and it is anticipated that studies in the field of perception will be the next to be undertaken.

PSYCHOLOGICAL RESEARCH ON EQUIPMENT DESIGN IN THE AAF

PAUL M. FITTS

Psychology Branch, Aero Medical Laboratory, Engineering Division, Wright Field, Ohio

RESEARCH MISSION

THE designing of all forms of equipment is generally considered to be a purely engineering function. But most of the tremendous variety of articles designed by engineers, be they industrial machinery, household appliances or children's toys, are intended for use or operation by human beings. It is apparent that the utility or success of such equipment must be, at least in part, dependent upon the degree to which it is suited to the psychological characteristics of the human beings who must use it. Up to the present time psychological data and research techniques have played an insignificant role in the field of equipment design. Relatively little data from the existing body of psychological fact can be applied directly to the problems of engineers. Current trends, stimulated by the war, indicate that psychological research on equipment design will become an increasingly important field of psychology, and will produce results of considerable practical and social significance.

Particularly in the field of aviation has the importance of human requirements in equipment design come to be recognized. There probably is no other engineering field in which the penalties for failure to suit the equipment to human requirements are so great. With present equipment, flying is so difficult that many individuals cannot learn to pilot an aircraft safely, and even with careful selection and extensive training of pilots, human errors account for a major proportion of aircraft accidents. The point has been reached where addition of new instruments and devices to those already present on the cockpit instrument panel actually tends to decrease the over-all effectiveness of the pilot by increasing the complexity of a task that already is near the threshold of human ability. As aircraft become more complex and attain higher speeds, the necessity for designing the machine to suit the inherent characteristics of the human operators becomes increasingly apparent.

Several groups of psychologists carried on psychological research on aviation equipment design problems during the war. The Applied Psychology Unit at Cambridge University reported studies of psychological requirements in aviation equipment design as early as 1940 (*2*). The aviation research program at Cambridge was sponsored by the Medical Directorate of the Royal Air Force and the Flying Personnel Research Committee. The German Air Force carried on psychological research on equipment design, but was later than the British in initiating work on this problem (*3*). In the United States aviation psychologists were first asked to assist in an equipment design problem in the fall of 1943 when a joint Army-Navy-British committee on aircraft standardization was attempting to reach agreement on the cockpit arrangement of six basic flight instruments. John G. Jenkins and E. Lowell Kelly for the Navy, and Paul M. Fitts for the AAF served as the psychological consultants to the committee. William McGehee, who was then on duty at the Naval Instrument Flying School in Atlanta carried out an experimental study in which the eye movements of pilots were recorded while they were flying with two different instrument arrangements (*10*). In 1944 the Department of Psychology, AAF School of Aviation Medicine, initiated a series of studies of design factors influencing the legibility of instruments (*5*, *6*, *7*, *8*, *9*) and studies of the desirability of using distinctive shapes for aircraft control knobs (*12*, *13*). The Special Devices Division in the U. S. Navy and the Naval Medical Research Institute also carried on studies of human factors in aviation equipment design. The Crash Injury Conferences sponsored by the NRC Committee on Aviation Medicine (*11*) and the Cornell University Project

sponsored by the same committee did much to stimulate interest in designing the cockpit around human requirements. In 1944 the Army Air Forces requested the Applied Psychology Panel of NDRC to undertake a study of psychological factors in the design of flexible gunnery equipment. The University of Wisconsin was given the contract for this project. Most of the research was carried out at Laredo Army Air Field (*4*). On 1 July 1945 the AAF established a new branch of the Aero Medical Laboratory at Wright Field, with the mission of conducting psychological research on equipment design problems of interest to the AAF. This unit is now a part of the peacetime AAF Aviation Psychology Program.

ORGANIZATION OF THE PSYCHOLOGY BRANCH

The location of the Psychology Branch at Wright Field is especially advantageous for equipment design research. The headquarters for the Air Materiel Command is at Wright Field. This Command is responsible for the development and procurement of all equipment peculiar to the needs of the Army Air Forces. The Aero Medical Laboratory is one of 14 laboratories in the Engineering Division of the Command. Its unique responsibility is consideration of the human element in equipment design. Since 1935 the scientists in this laboratory, including biologists, biophysicists, physiologists, physicians, anthropologists, and engineers have worked on such problems as oxygen equipment and pressurized cabins for high altitude flight; effects of "G" on the individual and methods of counteracting it; body size requirements for clothing, seats, escape hatches and turrets; pilot comfort; and escape from aircraft in flight. Among the many advantages of the Wright Field location are close association with other biological scientists and with the engineers who are responsible for design and procurement of new airplanes and other aviation equipment. Location in the Aero Medical Laboratory also makes it possible to keep together in one branch all psychologists who are working on engineering problems, and permits the staff to devote a major portion of time to basic research on problems of interest to the entire Engineering Division.

The scope of responsibility of the Psychology Branch covers all types of equipment used by the AAF. The branch is officially charged with "psychological research to determine the capacities of individuals to operate new types of equipment as an aid in the designing of such equipment to the end that the final project will be best adapted to the man who must use it."

The branch is organized into three units in terms of the type of equipment problems studied. One unit specializes in cockpit display and control problems; one in psychological problems in design of radar, navigation, communication, gunnery, bombing and pilotless aircraft equipment; and one specializes in flight testing. This organization facilitates close liaison with other Wright Field laboratories and encourages staff members to learn as much as they can about the kinds of equipment with which they are working. The branch also is organized informally along conventional psychological lines of interest and specialization, such as perceptual problems, motor abilities problems, statistical problems and job analysis problems. This specialization makes it possible for men with similar interests to work together on psychological problems that are common to many different items of equipment.

RESEARCH PROBLEMS

The program of research that has been planned can be outlined systematically under a few broad headings. In order to illustrate problems in these areas, and to indicate some of the present activities of the Psychology Branch, current projects are used as examples of research in each area.

Control Problems

In the operation of any machine, some kind of control device is required. The characteristics that are desired in this control depend upon the function which it is designed to perform. A quick, all-or-none movement or a slow precise control may be required. At other times smoothness or exact timing of control movement may be an important requirement. Each such requirement may necessitate the design of a different type of control.

The design of a control can be varied in numerous ways. Many of these possible designs are equally feasible from an engineering point of view. One of the first problems for psychological research should be determination of the most important design variables in relation to the effectiveness of operation. Such variables as the following have been selected for early study: placement of the

control with relation to the body, especially with relation to the eye point; extent of movement required and muscle groups used in this movement; direction and kind of movement involved; amount of pressure or force required; and rate of movement. Problems arise, of course, involving the interaction of several or all of these variables. Also there are questions relating to the operation of several sets of controls concurrently, and the control of several dimensions of motion at the same time.

A problem which is now under investigation by the Psychology Branch is the accuracy with which pressure can be applied to a control, as a function of the absolute amount of pressure applied and the direction of application. The answer to this problem is particularly pertinent to the design of controls in new airplanes where it is possible, through the use of booster systems, to give the pilot almost any range of pressures ("feel of the controls") that is desired. The problem has been studied first in the laboratory by means of a psychophysical technique for measuring the variability of pilots and non-pilots in producing specified pressures on conventional type foot and hand controls. Later it is planned to determine how skill in a coordination task is related to the control pressures employed.

Display Problems

In the design of most machines provision must be made to supply the operator with precise information regarding the condition of the equipment he is controlling and with other related data. As in the case of controls, the design requirements for a display system vary with the task which the operator must perform. The design of displays is in many respects a psychological problem, involving the selection of the sense modality and the specific cues to be employed in providing the operator with information which he cannot perceive by his unaided senses.

A requirement that is common to almost all displays is that of providing for accurate perception. Print must be legible, dials must be capable of being read accurately, auditory signals must be clearly distinguishable, and images on a radar scope must be sufficiently sharp for recognition. Size, intensity, contrast and other variables should be studied in relation to the conditions under which the equipment is used, such as vibration, background noise, and high speeds.

It is important also that the meaning of a display be apparent immediately, in order that the operator can react rapidly and correctly while engaged in highly complex activities. In general it is believed that interpretation of an indicator should be in harmony with well established habits of perceiving. For example, it has been shown that errors in reading a particular navigation plotter are due to the fact that the scale increases from right to left, instead of from left to right, which is the conventional practice. In many cases it is important to determine what type of display is most natural or "expected" for untrained subjects. It is particularly important that the basic flight instruments used by the pilot indicate the attitude and position of the airplane in three-dimensional space, and the rates of change of these conditions in the most easily comprehended manner. An interesting psychological problem in this connection is the three-way relationship in the directions of movement of the instruments, the airplane, and the controls used for operating the airplane. It is important that these interrelationships conform to the most natural human perceptual habit patterns. The Gestalt principles pertaining to figure and ground have some application to this problem.

A further important display problem is the determination of the best sense modality through which to present different kinds of quantitative information. This question has arisen in connection with the design of warning devices, the transmission of blind landing information, the interpretation of radar returns, and many other problems. There are further problems of the best colors, tones, intensities, etc., for different displays and the best methods for representing a large number of separate conditions simultaneously.

An example of research on a display problem is a current study being made of the relative desirability of presenting numerical information in tables or in graphs. The Psychology Branch was asked whether men could obtain data more quickly and accurately from graphs or from tables. In order to answer this question several functions were represented as graphs, and the same functions were given in tables. Subjects were required to work the same problems with both types of materials and results were analyzed for speed and accuracy scores. Further comparisons are being made of systematic variations in the graphs and tables themselves. Results thus

far obtained have been very conclusive and it is evident that definite answers can be given to many practical questions involving the choice of graphs or tables for presenting data (*1*).

Study of Human Limitations

Regardless of how carefully equipment is designed, there always will be human limitations to its use. This is particularly true in aviation, where higher speeds, heavier loads, longer range and increasing complexity of modern aircraft are placing increasingly greater demands on the crew members. Human limitations must be studied in order to determine whether personnel can learn to operate proposed new items of equipment. Because of safety considerations the problem of human capacity usually requires the study of very unfavorable or exacting conditions, and emphasis on the extreme ranges of individual variability. An important problem in this area is the change in operator effectiveness after 6 to 12 hours of continuous work. Many flying duties, such as those of a pilot on a long mission, require the performance of arduous and exacting skills at the end of long periods in the air. It is not sufficient to know that a pilot feels fatigued after a long mission. Precise information is needed on the degree to which specific skills are impaired.

Other problems include such questions as the amount of time required for a man to accomplish a specified control operation, to read a series of instruments, or to transmit directions. The effects of unfavorable environmental conditions, such as extremes of heat and cold, on ability to carry out flying skills should be studied. The study of vision during very high speed flight near the ground is another problem requiring study.

A specific example of research in this area is a study which has been undertaken by the Psychology Branch to determine the effects of moderate amounts of "G", below the blacking-out threshold, upon the performance of skilled movements and upon perceptual processes. Simple tests that can be administered in one or two minutes are being used under several conditions of acceleration in the human centrifuge. Results will be of value in designing equipment and devising flying tactics for pilots of high speed planes. The findings also will provide general information regarding the effects of reduced cerebral circulation on perceptual motor processes.

Systems Engineering Problems

Aircrew members have to use many different instruments and controls. The arrangement of this equipment for effective human use is the problem of systems engineering. It is an area of engineering in which the psychologist can offer valuable assistance.

With working space in an airplane at a premium one of the most frequent problems in systems engineering is the location of a great deal of complex equipment so that the operator can use all of it effectively without getting up from his seat. Frequently several men must work as a team, and in this case it is necessary to decide where each man will work, what equipment he will use, and how each man's duties will be integrated with those of the others.

Although systems engineering problems often do not lend themselves as readily to basic systematic research as do the problems in the preceding three fields, they cannot be neglected. Together with consulting service and the study of prototypes of specific items of equipment, assistance on systems engineering problems is the phase of psychological engineering which leads most quickly to important practical results.

At present the Psychology Branch is cooperating in the solution of systems engineering problems for several new airplanes. The first models of some of these planes will not fly for several years, and much of the equipment to go into them has not even been built. The division of duties between crew members, and even the number of men required for certain operations, is still to be decided. It is during this design stage, however, that consideration of psychological requirements is most important if new high speed planes are to be built so that they can be operated safely and effectively.

IMPLEMENTING THE RESEARCH PROGRAM

Because psychological research on equipment design problems is such a new field it will be of interest to review the principles that have been followed and the points of view that have governed in the choice of problems and methodology. Policies are still evolving, of course, as new problems are encountered.

It is possible to undertake research on problems representing three levels of generality: (1) specific questions about particular items of equipment, as

for example, comparison of tracking accuracy with two different gun-sight hand grips; (2) psychological problems common to many different items of equipment, as, for example, determination of the best relationship between direction of movement of controls and related instrument displays; and (3) broad psychological questions requiring systematic study to determine basic principles of behavior, as, for example, study of human motor abilities. Only a few specific studies of the first type have been initiated. Major emphasis is being given at present to the second type of problem, in order to insure extensive application of the limited amount of research that it is possible to undertake. It is planned to carry on also some systematic basic research on such topics as the nature of human motor abilities, or the nature of orientation ability. In the long run, these basic studies should lead to the greatest number of important practical applications. Staff members are encouraged to design experimental studies in such a way that findings of broad general significance are likely to result.

Data on equipment design problems can be gathered in the air, in the laboratory, and in the field where flying activities are in progress. The majority of work by staff members is done in the laboratory. However, one transport-type plane (C-45) is being used full time in a flight testing program. The flight program will parallel the laboratory research and will make it possible to verify the applicability of laboratory results to the flying situation. In addition to research carried on in the laboratory and in the air, periodic visits are made to flying fields, and information collected from experienced flying personnel and from other available sources.

The majority of staff time is devoted to research. All staff members, however, devote some time to conferences and to work with engineers where immediate practical decisions must be made. As more and more data are accumulated in the areas of psychological engineering, this consulting service should become much more effective.

A major problem in implementing research on equipment design has been the development of research apparatus. Many design problems can be answered in a matter of days once the necessary equipment is available for testing subjects. Facilities for developing apparatus include the Psychology Branch shop, the Aero Medical Laboratory machine shop, drafting and photographic departments, and the developmental engineering shops of the Engineering Division. Specialists in all branches of engineering, electronics, and instrumentation are available for consultation. It has also been possible to contract with commercial concerns for the development and manufacture of apparatus for use in the laboratory and in the air.

It is expected that all of the research projects undertaken by the branch can be given an open classification. It will be possible therefore for staff members to publish research findings in professional journals. It is believed that most of these research studies will be of general value to psychology as a whole.

RELATION TO OTHER RESEARCH AGENCIES

The Psychology Branch of the Aero Medical Laboratory, as a part of the post-war AAF Aviation Psychology Program, works in cooperation with psychology units in other commands. Equipment design is closely related to research on selection and training. The Wright Field unit, on the one hand, will be able to furnish advance information on new selection and training problems arising from the introduction of new airplanes and equipment. On the other hand, other units will furnish data on human aptitudes and training problems which will be of great assistance in guiding equipment design research. Coordination between the various psychological activities in the AAF is maintained through the psychology staff in the office of the Air Surgeon.

It is planned, also, to work closely with the psychological units in the U. S. Navy, including the Psychological Section of the Naval Research Laboratory, the Human Engineering Section of the Special Devices Division, and the Naval Medical Research Institute.

Now that most psychologists who served with the armed services or with government agencies during the war have returned to universities, it is considered particularly desirable to provide for interchange of information between university and government research groups, and to encourage individuals interested in aviation and related research problems to continue work in this field.

The Air Materiel Command has contracted with a number of universities for research on psychological aspects of equipment design problems. These

contracts run for one or two years. Some contracts provide funds for staff, equipment, and subjects. Others provide only an official basis for liaison. It is the policy in such contracts to give the university a great deal of freedom in planning research and to encourage systematic and fundamental studies. Problems for which contracts have been negotiated include the following:

(1) Determination of factors related to effectiveness of warning devices.

(2) Research on psychological factors affecting accuracy and speed of reading and interpreting scales, graphs, dials, and tables.

(3) Research on psychological principles in the design of controls for computing gun sights.

(4) Legibility of verbal and numerical information used in aircraft.

(5) Psychological study of flight controls, with special reference to requirements for prone position operation.

(6) Research on psychological aspects of orientation as they relate to the design of aviation equipment.

(7) Determination of the accuracy of reading aircraft type dials varying in diameter and angular spacing of the scale divisions.

The Air Materiel Command has opened a center for graduate study which offers on-the-job graduate training in engineering and related specialties at Wright Field. The center is operated through contract with a university and all courses carry university residence credit. The center for graduate study is provided with unique research facilities and training opportunities since all Wright Field research equipment is to be made available for training purposes. Men may be enrolled in a two year course of study leading to the M. A. degree or a four and a half year course leading to the Ph.D. Students go to class half time during working hours and half time after work. It has been agreed that psychology should be included among the courses of study offered by the center, and arrangements are being made for accomplishing this. This proposed curriculum in psychology would emphasize equipment design research problems and training in general experimental psychology. In addition to this training program for regular employees of the branch, plans are being made to employ several graduate students from universities on an internship basis and to permit them to carry out research for their dissertations on problems in the field of equipment design.

The Aero Medical Laboratory is interested in encouraging research on equipment design problems and will offer whatever assistance is possible to individuals or departments planning research projects in this field.

REFERENCES

1. CARTER, L. F. The relative effectiveness of presenting numerical data by the use of tables and graphs. *Air Materiel Command Engineering Division Report No. TSEAA-694-1*, 17 April 1946, 1–9.
2. CRAIK, K. J. W. The fatigue apparatus (Cambridge cockpit.) *Flying Personnel Research Report No. 119*, March 1940.
3. FITTS, P. M. German applied psychology during World War II. *The American Psychologist*, 1946, **1**, 151–161.
4. KENNEDY, J. L. (Ed.) Proceedings of Part I of the joint Army-Navy OSRD conference on psychological problems in military training. *OSRD Report No. 6079*, 11 October 1945. (Restricted).
5. LOUCKS, R. B. Legibility of aircraft instrument dials: The relative legibility of tachometer dials. *AAF School of Aviation Medicine Project No. 265*, Report No. 1, 30 May 1944.
6. LOUCKS, R. B. Legibility of aircraft instrument dials: A further investigation of the relative legibility of tachometer dials. *AAF School of Aviation Medicine Project No. 265*, Report No. 2, 27 October 1944.
7. LOUCKS, R. B. Legibility of aircraft instrument dials: The relative legibility of various climb indicator dials and pointers. *AAF School of Aviation Medicine Project No. 286*, Report No. 1, 2 November 1944.
8. LOUCKS, R. B. Legibility of aircraft instrument dials: The relative legibility of manifold pressure indicator dials. *AAF School of Aviation Medicine Project No. 325*, Report No. 1, 7 December 1944.
9. LOUCKS, R. B. Evaluation of aircraft attitude indicators on the basis of link instrument ground trainer performance. *AAF School of Aviation Medicine Project No. 341*, Report No. 1, 22 June 1945.
10. MCGEHEE, W. Comparative study of pilot fatigue resulting rom extended instrument flight using the standard AAF and British instrument panels. *Final Report, Project TED No. ATL-R601 Bureau of Medicine and Surgery*, U. S. Navy Department. (Restricted).
11. *Report of fifth crash injury conference* National Research Council, Committe on Aviation Medicine. 30 and 31 October 1945.
12. WEITZ, J. Effect of the shape of handles and position of controls on speed and accuracy of performance. *AAF School of Aviation Medicine Project No. 266*, Report No. 1, 12 June 1944.
13. WEITZ, J. Effect of shape and color coding of airplane controls on speed and accuracy of performance. *AAF School of Aviation Medicine Project No. 336*, Report No. 1, 23 December 1944.

TESTS USED IN VETERANS ADMINISTRATION ADVISEMENT UNITS

GERTRUDE BAKER and JOHN GRAY PEATMAN

Department of Psychology, The City College of New York

A SURVEY of the various psychological tests and diagnostic procedures used in the Veterans Advisement Units is provided by the results of a questionnaire received from 188 units. Cooperation in replying to the questionnaire was very gratifying and directors of many of the units indicated not only that they would like to receive a copy of the results but commended the survey. A questionnaire was sent on July 1, 1946 to all such advisement units then in operation, asking the director of each unit to indicate which tests were most useful in the counseling and guidance work with veterans.

The questionnaire listed 52 tests and diagnostic instruments selected by the authors (see Table I), with the following instructions: "For the following list of tests place an A in the ( ) if you use the test *frequently*, i.e., at least once for each 5 or 6 veterans interviewed; a B if it is used *often*, i.e., at least once for each 10 to 20 veterans; a C if used only *rarely*; and a D if you have not used it at all." By these instructions the attempt was made to define accurately the words *frequently*, *often* and *rarely*. Blank spaces were also provided on the questionnaire and the directors of the units were asked to list such tests in use at their centers which did not appear on our questionnaire. This instruction produced a rather lengthy list of additional tests—more than 200.

The average case load per week was also asked in the questionnaire and, during the summer of 1946, it was 42 veterans a week per unit.

The questionnaires of 175 of the 188 units were in satisfactory condition for the analysis summarized here. Of the 13 not used, 5 had checked tests without any indication of frequency; 3 did not check any test because their units were not yet in operation; and the remaining 5 evidently misunderstood the directions.

An examination of the results in Table I indicates that the tests used most frequently (at least once for each 5 or 6 veterans) were (1) the Kuder Preference Record (85%); (2) the Bennett Mechanical Comprehension (64%); (3) The American Council on Education Psychological Examination (54%); and (4) the Minnesota Clerical Aptitude Test (39%). From the point of view of usage, irrespective of frequency, the seventh column of Table I gives the percentage of such use, i.e., A, B, and C frequency are combined. The Kuder Preference Record had some use in 99% of the units replying; the Minnesota Clerical, 92%; the Bennett and the Minnesota Paper Form Board, 90%; the ACE Psychological Examination, 87%; the Wechsler Bellevue, 85%; the Purdue Peg Board, 79%; the Minnesota Multiphasic Personality Inventory, 77%; the Ohio State Psychological Examination and the Minnesota Rate of Manipulation Test, 75%; and the Strong Vocational Interest Inventory, 70%.

The test least frequently used was the Bulova Watch Test (only 3%), probably because of the unit directors unfamiliarity with this recent test. This is borne out by a number of inquiries received asking about the test and where it might be obtained. Only 5% of the units were using the Carnegie Achievement Tests, probably again because of general unfamiliarity with these tests. Widely known, but infrequently used, tests were the Stanford Binet, the Murray Thematic Apperception Test, and the Rorschach. The infrequent use of these instruments undoubtedly arises from their time-consuming and individual nature, rather than from a lack of appreciation of their value.

Tests reported as having some use in at least 10 guidance centers, and not included in our original questionnaire of the 52 tests, are summarized in Table II. The Otis Gamma, for example, was reported as *frequently* used in 35 centers; used *often* in another 9; and used *rarely* in another 5. The O'Con-

TABLE I

Frequency with Which Tests on Check-list Are Used by 175 V.A. Advisement Units Replying to Questionnaire

A—use the test frequently—at least once for each 5 or 6 Veterans; B—use the test often—at least once for each 10 to 20 Veterans; C—use the test only rarely; D—do not use the test at all.

	A		B		C		(A + B + C)	D		BLANK	
	N	%	N	%	N	%	%	N	%	N	%
General											
American Council on Education	95	54	34	20	23	13	87	14	8	9	5
Army Alpha	22	12	10	6	48	27	45	78	45	17	10
Army Beta (Revised)	11	6	15	9	54	31	46	77	44	18	10
California Mental Maturity, Adv.	29	17	15	9	57	32	58	57	32	17	10
Henmon-Nelson	11	6	10	6	27	15	27	100	57	27	15
Kent EGY	1	0.6	1	0.6	24	14	15	117	67	32	18
Ohio State	50	28	39	22	43	25	75	27	15	16	9
Otis Beta	51	29	34	19	27	15	63	45	26	18	10
Personnel (Wonderlic)	5	3	5	3	18	10	16	114	65	33	19
Stanford Binet	0	0	7	4	44	25	29	94	54	30	17
Wechsler-Bellevue	36	20	52	30	58	33	83	15	9	14	8
Manual and Mechanical											
Bennett Mechanical	112	64	39	22	7	4	90	9	5	8	5
Bulova Watch Test	1	0.6	1	0.6	3	2	3	136	78	34	19
Macquarrie Mechanical Ability	14	8	41	23	62	35	66	43	25	15	9
Minnesota Mechanical Assembly	18	10	17	10	29	17	37	81	46	30	17
Minnesota Paper Form Board Rev.	84	48	51	29	23	13	90	9	5	8	5
Minnesota Rate of Manipulation	36	20	61	35	36	20	75	24	14	18	10
Minnesota Spatial Relations	45	26	49	28	28	16	70	37	21	16	9
Pennsylvania Bi-Manual	23	13	23	13	33	19	45	65	38	31	17
Purdue Pegboard	62	35	47	27	30	17	79	22	13	14	8
Special											
Kwalwasser-Dykema	0	0	4	2	21	12	14	113	65	37	21
Lewerenz Art	1	0.6	14	8	33	19	28	94	54	33	19
McAdory Art	0	0	5	3	17	10	13	105	60	48	27
Meier Art Judgment	4	2	37	21	76	43	66	35	20	23	13
Seashore Music	1	0.6	14	8	74	42	51	60	34	26	15
Interest Inventories											
Brainard Interest	5	3	5	3	20	11	17	104	60	41	23
Cleeton Vocational Interest	4	2	10	6	39	22	30	89	51	33	19
Kuder Preference Record	149	85	15	9	8	5	99	2	1	1	0.6
Lee Thorpe Vocational Interest	29	17	18	10	15	9	36	86	49	27	15
Strong Vocational Interest	48	27	31	18	43	25	70	35	20	18	10
Achievement Tests											
Carnegie IV–X—Mathematics	1	0.6	1	0.6	7	4	5	124	71	42	24
Carnegie VII—Mod. Soc.	0	0	0	0	6	3	3	126	72	43	25
Carnegie—Pre-Engineering	0	0	6	3	5	3	6	122	70	42	24
Cooperative I Social Studies	16	9	27	15	42	24	48	64	37	26	15
Cooperative II Natural Science	18	10	23	13	43	25	48	64	37	27	15
Cooperative III Mathematics	20	11	27	15	42	24	50	60	34	26	15
Cooperative—English	22	13	14	14	38	21	48	61	35	30	17
Cooperative—French	0	0	1	0.6	23	13	14	113	65	38	21
Cooperative—Spanish	0	0	0	0	21	12	12	115	66	39	22

TABLE I (*Continued*)

	A		B		C		(A + B + C)	D		BLANK	
	N	%	N	%	N	%	%	N	%	N	%
Clerical											
General Clerical	7	4	18	10	20	11	25	98	56	32	19
Minnesota Clerical	69	39	60	34	32	19	92	6	3	8	5
NI IP Clerical	4	2	6	3	12	7	12	114	65	39	22
Thurstone Clerical	3	2	9	5	12	7	14	112	64	39	22
Personality Inventories											
Allport and Vernon	1	0.6	3	2	31	18	21	102	58	38	21
Bell	26	15	44	25	47	27	67	41	23	17	10
Bernreuter	28	16	30	17	58	33	66	42	24	17	10
Guilford Inventory	0	0	5	3	8	5	8	125	71	37	21
Minnesota Multi. Personality	29	17	44	25	62	35	77	26	15	14	8
P-S Experience Blank	1	0.6	3	2	5	3	6	128	73	38	21
Projective Techniques											
Murray Thematic Apperception	0	0	2	1	18	10	11	112	64	43	25
Rorschach	0	0	4	2	29	17	19	103	59	39	22
Wechsler-Bellevue	13	7	24	14	55	31	52	41	23	42	24

nor Finger and Tweezer Dexterity Test was reported as having some use by 83 guidance centers, although 18 of them indicated that they used it rarely. Altogether there are about 25 tests reported in Table II. In addition, the directors of various guidance centers listed on the questionnaire another 175 tests (not reported here) which had some use in less than 10 centers: 23 were general intelligence tests; 20 were manual and mechanical tests; 7 were interest inventories; 85 were achievement and special aptitude tests; 19 were personality inventories; and the remaining 21 were tests of a special nature.

The data presented in Table III summarize the results of this survey from the point of view of the different *categories* of tests used. The following areas of psychological measurement or diagnosis were used at least once for each 5 or 6 veterans interviewed: 96.5% of the guidance centers employed at least one general intelligence test, 93% used an interest inventory, 83% used a manual or mechanical test, 50% used a personality test, and 43% used a clerical aptitude test. Only 6% used a projective technique for personality diagnosis. Practically all units used, at least some of the time, a test of general intelligence, a manual or mechanical test, an interest inventory, a clerical test, and a personality inventory.

An analysis of the results for the frequency with which tests are used, independent of the particular class or category of the test, reveals that 25% of the units replying used 10 or more of the 52 tests with an A frequency (at least once for each 5 or 6 veterans), and 25% used 4 or fewer tests with an A frequency; 25% of the units used 9 or more of the tests with a B frequency (once for each 10 to 20 veterans); 50% used 5 or fewer tests with a B frequency; and 25% used 4 or fewer with a B frequency.

Possible sectional differences were also considered in the analysis of the results. The sources of the questionnaires were divided into four geographical areas: the North Atlantic states, including Washington, D. C. (35 units replying); the Southern states including Texas on the west (46 units replying); the Middle Western group from Ohio to and including the Dakotas (59 units replying); and the Western group for those states west of Texas and the Dakotas (35 units replying). Some interesting differences were observed. For example, if the A, B, and C frequencies of usage are combined, the ACE was found to be most popular in the North Atlantic area (100%) and least popular in the South (70%); the Ohio State was most used in the West (94%) and least used in the South (50%); the Otis Beta was most used in the South (83%) and least used in the

TABLE II

Additional Tests Most Frequently Used by V.A. Units Replying to the Questionnaire

	FREQUENCY OF USE			TOTAL A + B + C
	A	B	C	
General				
California Capacity Questionnaire	10	3	3	16
Otis Gamma	35	9	5	49
Otis Higher Examination	9	3	1	13
Otis Self Administering (Higher and Intermediate)	17	4	1	22
Manual and Mechanical Tests				
California Survey of Spatial Relations	2	3	6	11
Crawford Tri-Dimensional Spatial Relations	7	10	7	24
O'Connor Finger Dexterity Test	22	43	18	83
O'Connor Tweezer Dexterity Test	20	45	18	83
O'Rourke Mechanical Aptitude Test	13	19	8	40
Purdue Industrial and Training Classification Tests (I)	0	6	9	15
Stenquist	1	8	7	16
Interest Inventories				
Cardall Primary Business Interests	3	10	2	15
Thurstone Occupational Interest Schedule	1	2	8	11
Achievement and Special Aptitude Tests				
Engineering and Physical Science Aptitude	11	21	6	38
Iowa Aptitude and Training Chemistry	2	9	9	20
Iowa Aptitude and Training Physics	2	7	6	15
Progressive Achievement	1	5	8	14
Stanford Achievement	3	4	11	18
Stanford Scientific Aptitude	3	3	15	21
USAFI-GED Tests (High School and College)	20	15	23	61
Cardall Arithmetical Reasoning	1	3	6	10
Iowa Aptitude and Training Mathematics Test	3	11	8	22
Clerical				
Cardall-Gilbert Clerical Competence	3	2	7	12
Detroit Retail Selling Inventory	1	7	6	14
O'Rourke Clerical Problems	3	3	5	11
Personality Inventories				
Adams-Lepley Personal Audit	5	7	12	24
California Test of Personality	10	11	18	39

Middle West (53%); the Army Alpha varied from 63% in the North Atlantic area to 32% in the Middle West; and the Wechsler Bellevue varied from 94% in the North Atlantic area to 74% in the South. Considerable sectional differences in the use of projective techniques were observed. The West (63%) led in the clinical use of the Wechsler Bellevue as a projective technique, with the North Atlantic group 57%, the Middle West 49%, and the South 39%. The North Atlantic group led in the use of the Rorschach (34%), with the West 26%, the South 15%, and the Middle West 8.5%. Again, in the case of the Thematic Apperception Test, the North Atlantic group led with 17%, as compared with 13% for the South, and 8.5% for the West and Middle West.

Perhaps the most interesting implication of this survey lies in the diversity and variety of psychological tests employed by the various Veterans Administration Advisement Units throughout the United States. At the same time, nearly all of the centers use tests to measure and diagnose the major dimensions of psychological abilities and aptitudes. It is also apparent that instruments and procedures that are more time consuming and that require considerable clinical experience and training for their administration and interpretation, such as the Rorschach for personality diagnosis, are infrequently used.

TABLE III

Frequency of Use of the Eight General Types of Tests

CATEGORY	PERCENTAGE WITH AT LEAST 1 A	PERCENTAGE WITH AT LEAST 1 B BUT NO A	PERCENTAGE WITH AT LEAST 1 C BUT WITH NO A OR B	TOTAL PERCENTAGE USING TESTS IN THIS CATEGORY
General Intelligence	96.5	2.5	00.5	99.5
Manual and Mechanical	83.0	16.0	00.5	99.5
Special	6.0	37.0	40.0	83.0
Interest	93.0	6.5	00.0	99.5
Achievement	32.0	33.0	22.0	87.0
Clerical	43.0	41.0	14.0	98.0
Personality	50.0	28.0	20.0	98.0
Projective	6.0	16.0	33.0	55.0

It is significant that the Veterans Administration did not attempt to set up a program of advisement which would require all centers to administer a standardized test battery, irrespective of the needs of each individual veteran. On the contrary, a program geared to the problems of the individual veteran has been encouraged. This is indeed a healthy sign for the development of psychological measurement and diagnosis on such a tremendous scale.

THE CALIBRATION OF TEST ITEMS

L. L. THURSTONE

University of Chicago

THIS note is concerned with the calibration of test items as to difficulty so as to make it possible to produce successive editions of comparable examinations. This is a central problem for schools, test agencies, and Civil Service commissions who must prepare comparable examinations in successive years.

If several educational or psychological tests are to be assembled with some assurance that they be comparable in difficulty, the desirable procedure is to arrange a file of test items on each of which is recorded the difficulty rating. This rating can be expressed either in terms of proportion of correct answers for a given standardization group, or in terms of the corresponding sigma value on a scale which is arbitrarily so defined that the standardization group has a normal distribution. Successive editions of the test can then be prepared by selecting the same number of items at each difficulty level for each of the successive tests which are intended to be comparable. The correlations between the test items should of course be determined in a theoretically complete solution. In practice this is hair-splitting that is probably not worth the cost and effort, provided that each examination is long enough so that the average inter-item correlations can be considered comparable.

It is practically universal with the agencies that are concerned with successive editions of comparable tests that the initial file of items proves to be inadequate. If new items are to be added to such a test file one usually does not have access to the original standardization group. The question is then how to determine the difficulty ratings of the new test items so that they will be rated on the same basis as the items which are already in the file.

There are two policies which test agencies have adopted to solve this problem. One solution is to prepare one or two forms of an examination at rather high cost and to use the same examinations repeatedly. This requires that the examination forms be carefully guarded so that they do not become public property. The policy then is to number the test blanks and to insure by elaborate formalities that every test blank is accounted for and returned. Any system in which an examination is used repeatedly is an invitation for the subjects to beat the game. It is the writer's belief that a much better policy is to assemble a different set of items for each examination. This is a question of policy on which the several agencies differ markedly. If each examination is to be a fresh assembly of test items then it is of course necessary to have a large file of test items so that no item will be repeated oftener than say every five or six years or more. We must then solve the practical problem of rating the new items which are being added to the test file so that all of the items will be rated as to difficulty on the same basis.

For many years we have used a simple method for solving this problem. When several hundred new items have been prepared, they are given to a new standardization group because the original group is no longer available for standardization purposes. In giving the several hundred new items, we intersperse twenty of the old items whose difficulty rating was determined on the original standardization group. We refer to this list of twenty items as a linkage between the original standardization group and the new group. The difficulty ratings of the new items can then easily be determined for the new standardization group. The difficulty ratings of the linkage items are known for both groups. These items are selected so as to represent the entire range of difficulty.

There are two different ways of treating the data. Let us consider first the sigma ratings of difficulty. For example, a linkage item which was correctly answered by say 80 per cent of the original standardization group would have a difficult rating of $-.85$. If we plot the old sigma ratings against the new ratings for the twenty linkage items, we may expect a

linear plot if the old and the new standardization groups consisted of several hundred subjects. The slope of that line is the ratio of the standard deviations of the old and the new standardization groups. The intercept of that straight line shows the difference between the means of the two standardization groups. This is an application of the method of absolute scaling which the writer described some years ago (Thurstone, L. L., A method of scaling psychological and educational tests. *J. of Educ. Psychol.*, 1924, **7,** 433–451).When this plot has been made, one can easily translate the difficulty rating of the new items from the new group of subjects to the old group of subjects. In other words, when we know the difficulty rating of an item for the new standardization group, we can estimate what it would have been if that item had been given to the original standardization group, in spite of the fact that the original group is no longer available.

Another procedure is merely to plot the one set of proportions against the other for the twenty linkage items. A continuous monotonic increasing curve can then be expected. This curve can be fitted by inspection, or more elaborately if one so desires. From this curve one can estimate for each of the new items what proportion of the original standardization group would have passed it if the new item had been included in the original standardization.

This procedure has been in use in our laboratory for many years although, as far as I am aware, it has not been published previously. Occasionally one finds a very interesting deviation from the continuous curve of proportions or from the straight line of sigma values. One of the twenty items may be noticeably off the curve. This is likely to happen occasionally with material such as vocabulary items. On inspection we have found that such an item represents a word which might have been quite technical fifteen years ago but which has become well known because of recent events. The reverse can also happen but not so often. It would be incorrect to make a least squares fit by including such a deviant item. Such an item should be ignored. In dealing with vocabulary items or other types of material that are likely to change in difficulty because of current history, it may be preferable to use more than twenty linkage items. We have never found more than one deviating item in a set of twenty. In selecting the linkage items for standardization, it is best to inspect them with some editorial judgment as to whether they are likely to have been affected by current events. The old difficulty rating should of course then be revised and it should not be used as a linkage item.

The method of item calibration that has been described here is so simple that one can easily augment a test file to the desired number. When a sufficiently large file of test items becomes available, one can construct an indefinite series of comparable examinations with the same number of test items at each level of difficulty. This solution to the problem seems preferable to the policy of freezing an examination, keeping it secret so that it can be used in successive years. The availability of this simple solution to the problem of constructing parallel test forms may have a bearing on questions of policy with test agencies that hesitate to undertake the construction of new annual forms of their examinations.

Comment

IN DEFENSE OF MILITARY PSYCHOLOGY[1]

A reply to Robert Tyson

In the January 1947 issue of THIS JOURNAL Tyson considers the field of military psychology and reaches several conclusions. I shall discuss each of them separately. First he says:

> Writing by military personnel must be submitted for approval. Psychological articles were no exceptions to the rule that higher officers had to pass on material before publication. Since it is the consistent policy of the Armed Forces to present themselves in a good light, the sweetness and lack of criticism of war psychology becomes understandable. (Tyson, R. Footnote to military psychology. *Amer. Psychologist*, 1947, **2**, 21–22.)

In so far as the Navy is concerned this represents a misstatement of fact. U. S. Navy Regulations, Article 113 states:

> (2) Officers and other persons in the naval service desiring to publish articles on professional, political, or international subjects shall cause their signature to appear, together with a statement to the effect that the opinions or assertions contained therein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large. Immediately upon acceptance of such articles for publication, the writer will forward a complete copy thereof to the Secretary of the Navy for the files of the Navy Department.
>
> Subject to the requirements of this and of paragraph (1) above,[2] officers and others in the naval service are at liberty to publish articles without further permission from higher authority.

Professional articles are ordinarily, but by no means routinely, submitted to the *security* officer before submission for publication, to avoid the possible publication of information on sizes of populations etc., which might be of use to foreign powers. There is not, however, any regulation *or policy* which requires the submission of any professional article to *any* Naval Authority before submission to the publisher.

Tyson goes on to say:

> Psychology in the Armed Forces is science under an authoritarian regime. In the last analysis an authoritarian regime decides on the basis of seniority and rank. Ideas in the Armed Forces tend to bear the rank of their contributors and take precedence accordingly. Criticism in this atmosphere may be restrained.

This situation sometimes exists in the Armed Forces, but likewise frequently occurs in the working relationships of psychologists and others in industry, psychiatric hospitals, and if my memory of academic days serves me well, in universities.

Many military psychologists have pointed out in published articles that the training methods of the military services are far from perfect; the methods of assessing performance leave much to be desired; the placement of personnel many times is based on capricious circumstances. These are the types of criticism that are pertinent in professional articles. They are also the types of criticism found in articles concerning programs in industries and universities.

Tyson continues:

> The ultimate judge of military psychology was usually not a psychologist. It was in the nature of wartime Armed Forces organizations that the highest authority rested with professional military men whose knowledge of psychology, with the very best of intentions, made it impossible for them to look beyond the attractive colored charts presented to them and inquire into the actual value of the psychological work they represented.

One who works in the applied field must invariably face this situation. Management personnel in industry, physicians in charge of mental hospitals,

[1] The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

[2] Refers to paragraph 1, of Article 113 which governs military security *only*.

presidents (and treasurers) of universities, are seldom psychologists. It is an accepted part of any applied psychologist's job to demonstrate the usefulness of his work to the sponsors of his program in such a way as to gain support. An outstanding example of the possibilities of doing so in the Armed Forces is illustrated in a situation (Flanagan, J. C. The experimental evaluation of a selection procedure, *Educ. and psychol. Meas.*, 1946, **6**, 4.) where *nonpsychological* professional military men allowed the AAF Aviation Psychology Branch to place over 1,000 men in pilot training regardless of their performance on selection devices in order to obtain an uncontaminated validation sample. This, it seems to me, shows a high degree of insight by those in command into the problems of scientific method. Those who have attempted to obtain the same type of cooperation from their sponsors in nonmilitary situations have not always found the sponsor so understanding.

Tyson concludes with the statement:

> It is submitted that the place for military psychologists is outside the Armed Forces, acting freely in an advisory capacity.

Those of us on active duty realize the extreme value of consultation with other psychologists. Provisions for the continued use of such consultation have been made. We believe, however, that advice from the outside on psychological problems is largely unproductive unless the Armed Forces have someone in the active organization who will actually implement these suggestions. Someone has to do the work.

An arrangement of the type Tyson suggests obtained following World War I. Only time can say whether the psychologists who serve on active duty during the period following World War II can accomplish at least one j.n.d. over and above the zero accomplishment in the interval after World War I.—

HARRY J. OLDER, *Lieut., U. S. Navy*
Aviation Psychology Branch
Bureau of Medicine and Surgery

NOTEHAND FOR PSYCHOLOGISTS

Psychologists and students of psychology spend much time making notes and composing letters and manuscripts. In nontechnical writing, the hundred most common English words constitute more than fifty per cent of all the words used (Dewey, M. *Notehand and Other Labor-Savers*. Pamphlet, revised. Lake Placid Club, N. Y.: General Shorthand Corporation, 1942). In psychological writing, the same common words together with some four hundred others in their various forms constitute perhaps an even larger per cent of all the words used. These four hundred other words include many long and technical terms. By abbreviating most of the hundred common words and all of the four hundred other words, as in the system presented herewith, psychological writing is reduced, by actual measurement, about thirty per cent.

For most purposes, abbreviations are better than shorthand. Few persons working in psychology know shorthand; and any shorthand not written by an expert can be read only by the individual who wrote it and soon becomes "cold" even for him. Extant systems of speedwriting share the disadvantages of shorthand. Many a psychologist has developed a lot of abbreviations for himself; but such abbreviations are likely unique and so unsystematized that no one else can read them. What is needed is a system of abbreviations which can be learned easily and can be read by any one with a list or with a little practice.

The system presented in this paper was launched some thirty years ago. Most of the abbreviations of the common words came from Melvil Dewey's *100 Notehand Breves*. Except for a few special symbols, each of the five hundred abbreviations follows one or the other of Dewey's two main patterns, namely, to use either the first letter or letters, or the most characteristic letters, of the word abbreviated. Examples of the respective patterns are "sma" for "small," and "ltl" for "little." Unlike Dewey's system, however, in this one, except for the few special symbols, only actual letters of the words are used; the abbreviations of all nouns are capitalized; abbreviations of proper nouns are underlined; abbreviations of institutional structures and of blood kin are encircled; almost every abbreviation that spells a word is followed by a period; an apostrophe within an abbreviation stands for some important part of the original word; and every sentence begins, as in ordinary writing, with a capitalized and unabbreviated word. These several features make the system very easy to read.

Throughout the thirty years I have used the system constantly, both in making notes for myself and in drafting copy for others to read and type.

Some of these readers have been professional secretaries, but many have been student helpers. None of the readers had much trouble with the system, and each learned it quickly. Several of them suggested improvements which further readers have found satisfactory.

To avoid confusion, I have used the abbreviations only in writing by hand, never in typewriting. A few of the symbols, indeed, do not exist in type; they have to be written by hand.

Both for that reason and to save space, only the first 42 abbreviations are listed here. This sample portion of the list is followed by several examples which draw upon the complete list. The first example is abstracted from the opening paragraph of this paper. In actual use, "of" is represented by a check mark.

A mimeographed copy of the complete list will be mailed to any one who sends the approximate cost, 15¢ in stamps, to "15 Pierce Hall, Northampton, Mass."

abbrev	abbreviate
Abbrev	abbreviation
Abdy	anybody
Cp. Ebdy	
Nbdy	
Sbdy	
abn	abnormal
Abstrn	abstraction
abt	about
accd	accord
acct	account
ack	acknowledge
acqt	acquaint
adjt	adjust
Adjt	adjustment
Advgce	advergence
Advtge	advantage
aft	after
ag	again
ali	alike
alim	aliment
alr	already
alt	alternate
altho	although
altr'ic	altruistic
Altr'm	altruism
alw	always
amt	amount
anotr	another
ans	answer
approp	appropriate
approx	approximate
arg	argue
Arg't	argument
Cp. Arrgt	
Arith	arithmetic
Arrgt	arrangement
Cp. Arg't	
Art.	article
Assn	association
assoc	associate
Athg	anything
Cp. Ethg	
Nthg	
Sthg	
Attn	attention
Au	author
auton	autonomic
av	average
b	be

"Psychologists spend mu T mkg notes & composg Ltrs & MSS. In nontech'l Writg, t 100 most common English Wds constitute mo tn 50% √ all t Wds used. In psy'l Writg, t sm common Wds togetr w sm 400 otrs in tr dif Fms constitute phps an even la'r % √ all t Wds used. By abbrev'g, as in t Sys presented herew, psy'l Writg is reduced abt 30%."

"The terminology √ Psy is oft a source √ unnec Diff. Since we r to b studyg activities, our terms shd properly b verbs & adverbs. We shl need 1 noun, *Ind* or *O'sm*, as t Subj √ all t verbs. When we dip into Phys we need t names √ bodily O's, & wn we speak √ extl Obj's we need tr names. But t Rdr wl encounter a host √ otr nouns, names √ activities & ways √ Actg, su as Intel'ce, Pers'ty, Mem, Imag'n, Thot, Wl, Stn, Em, Attn, Pcptn, C, Behav. Most √ tse nouns r properly verbs w 'Ind' ustd as tr Subj."

"Various Au's in t last century & in ts hv thot tt mult Pers'ties r caused by Sug'n — Sug'n ei fr t Pt himsf, fr sm outside Pers, fr t Phy'n (esp'y if he hypn's t Pt), or fr mo tn 1 source. Apparently those Au's r ri- in part. Nevertheless, to ascribe mult Pers'ty to Sug'n in t abstract is to overlook mo esstl causes. Suggestion, to b effective, must find a rdy recipient; & recipients r made rdy var'ly by N & by special phys'l, psy'l, & envtal circumstances."

"As Francis Bacon said, 'Then o wl tr b gd ground √ hope f t furtr advance √ K, wn tr shl b rec'd & gatrd togetr into n'l Hist a Var √ Expts, which r √ no use in tmselves, bt simply serve to discover causes & axioms; which I call "*experimenta lucifera*," Expts √ Li-.'"

W. S. TAYLOR
Smith College

Across the Secretary's Desk

ACADEMIC ORIGINS OF APA FELLOWS

Which universities have given graduate training to the present Fellows of the APA? A tabulation of the Ph.D.-granting universities of the Fellows listed in the 1945 Yearbook of the APA, plus the Fellows of the AAAP who during 1945 transferred to that status in the APA, gives first place to Columbia University. Teachers College was included without distinguishing it from Columbia University because "Columbia University" is frequently named by people whose graduate work was done at Teachers College. The University of Chicago is in second place with slightly less than half as many as Columbia. Harvard and Iowa are in third and fourth places. The total percentage from each of ten leading universities is shown in the last column of Table 1.

Breaking the totals down by five-year periods shows a number of interesting trends in the rise and fall of a university's importance for psychology as measured by the number of APA Fellows it has trained. Columbia, the leader in totals, has been most consistent in its output. Between 16 and 25 per cent of the Fellows of the APA who received their Ph.D.'s in each five-year period since 1905 received them at Columbia.

Chicago, the second most productive school, earned that rank during the period from 1900 to 1919. During each of the four five-year periods in this span it granted between 13 and 15 per cent of the Ph.D.'s held by all present APA Fellows who earned their doctorates during those years. Since 1920 Chicago has declined steadily in terms of its contribution to the number of Fellows. Since 1935 it has trained only 5 per cent of the total.

Harvard, Clark, and Cornell have had similar histories. During the first 15 to 20 years of the century each gave Ph.D.'s to a sizable fraction of the total. Since then all three have been steadily losing ground.

Yale, Stanford, Iowa, Minnesota, and Ohio State have all grown in relative importance during the last two or three decades. Yale was one of the early-day leaders. From 1905 to 1924 it trained a consistently small number of present Fellows. Since 1925, however, it has risen steadily to climb into second place for the group receiving the degree since 1935.

The State University of Iowa has been an up-and-down producer of Ph.D's who have since become APA Fellows. It had peaks in 1910 to 1914 and again in 1925 to 1934.

Minnesota, Ohio State, and Stanford, starting from scratch about 1915, have each shown steady increases in the years since.

All other universities contributed approximately a third of the total in each five-year period.

Table 1 can be summarized in part by considering the four leading universities in each decade since 1900. The four universities contributing the largest number of Fellows who received the Ph.D. degree between 1900 and 1909 are Harvard (11), Columbia

TABLE 1

For each five-year period, the percentage of the Fellows of the APA who received the Ph.D. from leading universities

UNIVERSITY	FIVE YEAR PERIODS								
	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935*-1944	Total period 1900-1944
Columbia	4	22	24	20	25	20	16	24	20
Chicago	13	15	15	13	11	8	7	5	9
Harvard	34	7	10	11	6	6	6	3	7
Iowa	4	2	7	1	3	9	8	4	6
Yale	8	2	2	2	1	5	7	12	5
Clark	4	17	12	10	4	4	4	2	5
Ohio State	0	0	0	2	2	6	8	5	5
Stanford	0	0	0	3	5	5	5	4	4
Cornell	4	2	10	3	6	2	1	1	3
Minnesota	0	0	0	1	3	3	4	5	3
All others	29	32	20	32	34	33	34	35	33
Total	100	99	100	98	100	101	100	100	100
Percentage of all APA Fellows receiving Ph.D. in each period.	3	5	7	10	14	22	23	15	

* A ten-year period is included in this column. The number of Fellows whose degrees were received in 1940 or later is not large enough to warrant a separate column. Including them here does not alter or distort any of the trends shown in the table.

(10), Chicago (9), and Clark (8). The same four schools lead in the next younger group, those who received the degree between 1910 and 1919, but with the schools ranked in different order and with larger differences separating them: Columbia (32), Chicago (21), Harvard (16), and Clark (16). In the group which received the Ph.D. between 1920 and 1929, Iowa replaced Clark in the top four and the differences between the ranks increased further in size: Columbia (70), Chicago (29), Iowa (22), and Harvard (18). Only Columbia of the original four remains among the leaders in training the Fellows who received the Ph.D. since 1930: Columbia (64), Yale (30), Ohio State (24), and Iowa (22).

Nearly half of the entire group received the Ph.D. during the 10 years 1925 to 1934. Those who received their degrees earlier got them at a time when Ph.D.'s in psychology were less common; they are also reaching an age of higher death rates. Those whose degrees were received in 1935 or later have progressed rather rapidly in attaining the status of Fellow. Hence they are not numerous (many others whose degrees date from 1935 or later will become Fellows in future years). This leaves the main group of Fellows coming from the decade 1925 to 1934.

There is a large difference in the frequency, or in the speed, with which graduates from the different schools advance to the status of APA Fellow. The number of Ph.D.'s in psychology granted from 1935 to 1940 (data from E. L. Smith, *Amer. J. Psychol.*, 1944, **57**, 95) and the percentage from each school which had become APA Fellows by the end of 1945 are shown in Table 2. For all schools combined, about one person in five who received a Ph.D. in the years 1935 to 1940 inclusive had become a Fellow by the end of 1946. The records of Harvard and three Midwestern schools, Chicago, Ohio State, and Minnesota, approximate this national average. Stanford, Clark, Yale, and Columbia Ph.D.'s did much better; those from Iowa and Cornell much worse. Why these large differences? Do some colleges select better graduate students who then advance more rapidly after completing their graduate training? Do some colleges train their graduates to specialize in the kind of activities which lead most easily to advancement in the APA and the AAAP? Or do some colleges actively stimulate and help their students to advance more rapidly than others? The colleges themselves can answer these questions easier than an outsider surveying the statistics. Whatever the answer, the differences are so large that it seems worthwhile for the universities to consider possible explanations of their own records.

TABLE 2

Number of Ph.D.'s granted from 1935 to 1940 by each university and the percentage from each who have become APA Fellows.

UNIVERSITY	NUMBER PH.D.'S IN PSYCHOLOGY, 1935-1940	NUMBER ELECTED FELLOWS OF APA BY END OF 1945	PERCENTAGE ELECTED FELLOWS OF APA BY END OF 1945
Columbia	86	31	36
Chicago	28	6	21
Harvard	21	4	19
Iowa	86	6	7
Yale	40	16	40
Clark	7	3	43
Ohio State	42	7	17
Stanford	11	6	55
Cornell	15	1	7
Minnesota	28	7	25
All others	319	46	11
Total	683	132	19

DAEL WOLFLE

Psychological Notes and News

KURT LEWIN died February 12, 1947 at the age of fifty-six years. He was chairman of the Research Center for Group Dynamics of the Massachusetts Institute of Technology.

DONALD G. MARQUIS of the University of Michigan is directing a study in social sciences for the Carnegie Corporation. As part of his task he is currently engaged in surveying social science problems and methods.

FRED BROWN is now Chief Psychologist for Mount Sinai Hospital, New York, and lecturer in psychology at New York University. He entered the armed forces in 1943 and among his other duties organized the psychology department of the Shrivenham American University, England. During his last seven months overseas he toured the American Zone as lecturer for the I. and E. Lecture Bureau, USFET.

IRVING C. WHITTEMORE, formerly director of the Veterans Center of Boston University, has been appointed chairman of the psychology department at the College of Business Administration there.

THOMAS J. HAND has been appointed Chief, Retraining Service, at the VA Hospital, Sunmount, New York. He was previously rehabilitation counselor at the Saranac Lake Study and Craft Guild.

UDO UNDEUTSCH, Dozent of psychology at the newly opened University of Mainz, has written that ALBERT WELLEK is head of the Psychological Institute there. The university is housed in former antiaircraft barracks, and has a student population of 4,000 who were selected from some 10,000 applicants.

JOHN T. COWLES has returned as a civilian to the Aviation Psychology Program of the Army Air Forces, in which he served as an officer during the war. He is director of the Aviation Psychological Research Unit at Headquarters, Flying Division, Air Training Command, Randolph Field, Texas.

EDMUND G. WILLIAMSON, Dean of Students at the University of Minnesota, has returned from Germany where he was a member of a fifteen-man commission which investigated and evaluated German war developments in scientific and personnel management, and industrial training.

JOHN E. PARTINGTON, formerly personnel consultant with the Adjutant General's Office, has been appointed personnel counselor in the Vocational Rehabilitation and Educational Division of the VA Regional Office, Roanoke, Virginia.

ROBERT M. W. TRAVERS has been appointed University Examiner in the Institute for Human Adjustment and associate professor in the School of Education at the University of Michigan. He was formerly the chairman of the department of psychology at Beloit College, Wisconsin. LESTER E. WILEY has accepted the appointment as chairman of the department and professor of psychology at Beloit.

CALVIN P. STONE has received a $2400 grant for research on the effect of electro-convulsive shock therapy on the behavior of rats. His research assistants will be IRWIN KATZ, MILTON W. HOROWITZ, PAUL PORTER, and other graduate assistants in psychology.

KENNETH F. HERROLD is an instructor in the Division of Guidance, Teachers College, Columbia University. Formerly he was with the Michigan Child Guidance Institute.

MARION R. STOLL has accepted a position with the department of psychology at the University of Alabama, beginning with the spring quarter of 1947.

PHILIP WORCHEL is now assistant professor in the department of psychology at Tulane University.

H. H. REMMERS will be a visiting professor at the University of British Columbia, Vancouver, Canada, in the summer session of 1947. He will lecture on measurement and evaluation.

FRANCIS IRWIN, editor of the Journal of Experimental Psychology, has appointed the following

consulting editors: CLARENCE GRAHAM, HARRY HELSON, DONALD B. LINDSLEY, GEORGE A. MILLER, L. L. THURSTONE, G. R. WENDT, and JOSEPH ZUBIN.

The Metropolitan New York Association for Applied Psychology has elected the following officers: GEORGE LAWTON, president; GEORGE K. BENNETT, vice-president; and BLANCHE E. WEILL, secretary-treasurer. The members of the council are: KATHRYN MAXFIELD, WALLACE WULFECK, KATE LEWIS, and MYRTLE PIGNATELLI.

FREDERICK A. ZEHRER, formerly Director, School Division, Headquarters, First Service Command, is now lecturer on educational guidance at Harvard Graduate School of Education and personnel counselor in the VA Guidance Center there.

The University of Florida has expanded its department of psychology. The present staff includes: E. D. HINCKLEY, ROBERT P. FISCHER, GEORGE W. KISKER, DAVID K. SPELT, STAN E. WIMBERLY, R. J. ANDERSON, K. S. DAVENPORT, I. R. STONE, OSBORNE WILLIAMS, and JACK D. EMERSON.

The department of psychology of the University of Pittsburgh has added to its staff the following psychologists as part time lecturers in order to take care of increased teaching needs. Each of them lectures in the field of their specialization. They are: DORA CAPWELL and MAHLON V. TAYLOR of the Allegheny Vocational Counseling Center; CARROLL WHITMER and MARY ELWOOD of the Special Education Division, Pittsburgh Public Schools; SAUL ROSENZWEIG and ROBERT A. PATTON of the Western Psychiatric Institute; ROY M. HAMLIN and I. COBLENTZ of the Mental Hygiene Clinic of the VA; JOHN GORSUCH of the Carnegie-Illinois Steel Corporation; NETTIE LEDWITH of the Pittsburgh Child Guidance Center; JUSTIN HARLOW of the Behavior Clinic of the Allegheny County Criminal Court; THEODORE O. ELTERICH of the University of Pittsburgh Medical School; and Y. D. KOSKOFF of the Montefiore Hospital.

Shortly before his death, CHARLES S. MYERS prepared a bibliography of his publications. The National Institute of Industrial Psychology, Aldwych House, London W. C. 2, will send copies to any American universities which apply for them.

The San Francisco State College, 124 Buchanan Street, San Francisco, California has made several additions to its department of psychology. JOHN CORNEHLSEN has been appointed associate professor and dean of men; BOYD R. MCCANDLESS, assistant professor; and GEORGE SHEVIAKOV, lecturer. A VA Guidance Center will be set up there, with employment opportunities for at least two and possibly four other psychologists who will counsel half time and teach half time.

FORREST LEE DIMMICK, professor of psychology at Hobart and William Smith Colleges, has been granted a year's leave of absence to accept an appointment as psychological specialist in vision at the U. S. Naval Medical Research Laboratory, U. S. Naval Submarine Base, New London, Connecticut. During his absence CLAIRE C. DIMMICK will be acting head of the department, and ROBERT BURNHAM has been appointed as instructor.

W. J. BROGDEN, professor of psychology at the University of Wisconsin, has been appointed assistant dean of the Graduate School.

The Division of School Psychologists has appointed BERTHA M. LUCKEY chairman of the program committee, WILDA M. ROSEBROOK chairman of the membership committee, and MORRIS KRUGMAN chairman of the nominating committee.

The Undergraduate Division of the University of Illinois in Chicago has established a personnel bureau for students. Its function will be counseling, including test services as related to educational, vocational, and personal adjustment. The staff will include PAUL C. GREENE, assistant director in charge, WILLIAM F. THOMAS, clinical counselor, and HOWARD L. SIPLE, associate counselor.

The Psychological Guidance Center of Chicago, Illinois announces the addition of ROY BRENNER to its staff.

At the February meeting of the Illinois Association for Applied Psychology a symposium was held on "Training Programs and Problems in Clinical

Psychology." The speakers were GORDON V. ANDERSON, WILLIAM A. HUNT, JOHN P. SPIEGEL, and PHYLLIS WITTMAN.

In a recent letter F. J. ARNTZEN described the status of psychology in German universities at the end of 1946. During the war the buildings of the psychological institutes of Marburg and Muenster were destroyed and other institutes lost large parts of their libraries. Psychological periodicals had to cease publication and the printing of psychological books was limited to those approved by the government authorities. The state-sanctioned organization of all psychologists came to an end with the end of the war. The occupation of the different zones by the various allied powers has caused psychologists to migrate to other zones. Some psychologists were caught in the de-nazification process and had to give up teaching entirely.

The destroyed institutions have been housed in other buildings of the universities temporarily, but the publication of books and periodicals has been hindered by the difficulties of printing. Although the restoration of psychological societies has begun, the organization will probably take place only within the individual zones. In most universities teaching has been resumed sufficiently to allow students to prepare for the MA examination. ALLESCH is now teaching at Göttingen, DÜKER, at Marburg, HELLPACH at Heidelberg, LERSCH at Münich, METZGER at Münster, RÖSSEL at Hamburg, and SPRANGER and KRETSCHMER are at Tübingen.

The contact of German psychologists with the research of other countries is still very inadequate because of the impossibility of obtaining scientific periodicals and books, and the restriction of mail and currency exchange.

In the announcement of internships at the Western State Psychiatric Institute and Clinic in the February issue of the AMERICAN PSYCHOLOGIST, mention of their arrangements with the University of Pittsburgh was omitted. The supervised clinical and research experience with mental patients may be counted as six semester credits and course work may be taken at the university to the extent of three credits a semester. If the intern wishes to continue as a graduate student at the university, it may be possible to arrange for beginning of the research for the thesis toward the latter part of the internship.

The Dartmouth Eye Institute has donated a set of demonstrations concerning the nature of experience to the Office of Public Opinion Research of the department of psychology at Princeton. It has also prepared a laboratory manual, *Some Demonstrations Concerned with the Origin and Nature of Our Sensations*, indicating the phenomena to be observed and their apparent explanation. The demonstrations will be used for teaching and research.

At the annual meeting of the Psychometric Society at Philadelphia in September 1946, it was moved to decline with thanks the invitation of the American Psychological Association to become a division of that association.

The second annual coordinating conference of the Western State Psychiatric Institute and Clinic, Pittsburgh, will be held on April 10 and 11. The theme this year will be the place of psychiatry in general medicine. The principal speaker at a dinner meeting the first night of the conference will be Dr. WINFRED OVERHOLSER, president-elect of the American Psychiatric Association. All professionally interested individuals are invited to attend.

The Bureau of Psychological Services of the Institute for Human Adjustment at the University of Michigan has begun a new program of counseling for the blind, working at the present time with blind persons referred to them by the State Department of Social Welfare. W. W. MORRIS is the chief psychologist for the Special Clinical Services in the Bureau and is in charge of this work.

Wartime research has led to the development of two new devices for the blind. One is the portable "audograph" which makes possible the recording of class lectures. The other is an electronic pencil which is still in the experimental stage. It translates printed letters into sounds which can be interpreted by the blind person, making possible the reading of normal printed material.

The annual meeting of the American College Personnel Association will be held at the Deshler Wallick and Fort Hayes Hotels, Columbus, Ohio, in conjunction with the Council of Guidance and Personnel Associations, March 28 to 30. Digests of papers to be submitted for the consideration of the program committee should be sent to Wendell

Dysinger, Chairman. Hotel reservations should be made as soon as possible.

The Industrial Services Division, Department of Labor has prepared a booklet, *Industrial Films, a Source of Occupational Information*, which reviews 51 industrial films that present information about jobs in 18 industries. This publication describes the films and evaluates them, as well as including information on their distributors. The booklet is available for 20 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

Princeton University has started a program of systematic analysis of student development and educational procedures. The object of the project is the critical examination of residential university life, including both instructional programs and extracurricular activities, to determine their results as measured by the intellectual, moral, and physical development of students. The study, believed to be unique in the field of higher education, is made possible by a grant of $200,000 from the Carnegie Corporation of New York. It is estimated that it will require at least five years to complete.

On November 22, 1946 the organization of the Georgia Psychological Association was formally completed, the constitution adopted, and officers for 1947 elected. HERMON W. MARTIN was elected president, ROBERT M. HUGHES, president-elect, J. E. MOORE, treasurer, and Mrs. R. C. TOPPER, secretary. EMILY S. DEXTER, SIDNEY JANUS, and LARRY ROSS were elected directors. The charter membership of the GPA consists of 27 members of the APA who are residents of Georgia, and several APA members from adjoining states.

GEORGE LAWTON is now offering a course in counseling for the older person at the New York University School of Education. The course is designed for those who wish to learn how to deal more effectively with the adjustment problems of older people.

The Department of Commerce has published a series on "Establishing and Operating Your Own Business" for counseling veterans and senior high school students. The specific titles can be obtained from the Commerce Department, Washington, D. C.

The School of Education of Syracuse University, in cooperation with the George Davis Bivin Foundation and the Psychological Services Center of Syracuse University, will sponsor a conference on mental hygiene and the problems of exceptional children on May 2 and 3.

The first national conference on counseling and guidance conducted by the National YMCA Committee on Placement and Guidance will be held at George Williams College Camp, Lake Geneva, Wisconsin, June 23 to 26. Among the topics on the program are group guidance and group work activities, training and professional growth of counselors, psychometric use and disuse, effective interviewing in the informal agency, implications of war work and recent research, and the utilization of community resources. The conference secretary is Robert R. Corley, 304 Wood Street, Pittsburgh, Pennsylvania.

The seventh annual meeting of the State Directors and Supervisors of Special Education was held March 3 in Atlantic City, New Jersey. Each state presented its plan for the solution of various educational problems.

A study of the question as to whether veterans make better college students than non-veterans is being made by the College Entrance Examination Board. It is supported by the Carnegie Foundation for the Advancement of Teaching and the Carnegie Corporation of New York. Approximately a dozen colleges and universities throughout the country will be invited to participate in the project. In order that the study may include students from as many different types of institutions as possible, the group will be chosen on a broad geographical basis and will include both large and small colleges as well as men's and co-educational institutions.

It is expected that the 4-year graduate training program leading to the doctorate in clinical psychology sponsored by the Veterans Administration in cooperation with the universities accredited in this field (described in the June, 1946 issue of THIS JOURNAL) will continue for several years. It is anticipated that there will be approximately 350 additional positions throughout the country available in September, 1947. Salaries sufficient for self-

support are paid by the Veterans Administration to accepted applicants. Veterans are given preference, but non-veterans may also apply. Both men and women are accepted. Further information may be obtained from the Chief, Clinical Psychology Section, Veterans Administration, Washington 25, D. C.

The Clinical Psychology Section, Neuropsychiatry Division, Veterans Administration, announces the following additional appointments in the clinical psychology program of the Veterans Administration (see AMERICAN PSYCHOLOGIST, September 1946, for previous list):

Branch Chief Clinical Psychologist	*Branch Office*
CHESTER C. BENNETT	#1, Boston, Mass.
STARKE R. HATHAWAY	#8, St. Paul, Minn.
JERRY W. CARTER, JR.	#9, St. Louis, Mo.
HAROLD M. HILDRETH	#12, San Francisco, Calif.

Asst. Branch Chief Clinical Psychologist	*Branch Office*
MAX COOPER	#1, Boston, Mass.
N. NORTON SPRINGER	#3, Philadelphia, Pa.
DONALD RAMSDELL	#6, Columbus, Ohio
H. MAX HOUTCHENS	#11, Seattle, Wash.
RUTH TOLMAN	#12, San Francisco, Calif.

On Duty in Regional Offices—Mental Hygiene Clinics:

Name	*Location*
NATHAN GOLDSTEIN	Chicago, Ill.
NORMAN KAPLAN	Columbia, S. C.
GENETTE M. BURRUS	Dallas, Tex.
LAWRENCE S. ROGERS	Denver, Colo.
RICHARD SEARS	Detroit, Mich.
OLIVER FOWLER	Los Angeles, Calif.
PEARL GREENBERG	Newark, N. J.
ELIAS ABRAMS	Newark, N. J.
VERNON V. SISNEY	New Orleans, La.
ARTHUR TEICHER	New York, N. Y.
WALTER COVILLE	New York, N. Y.
BERTRAM POLLENS	New York, N. Y.
FREDERICK WATTS	Philadelphia, Pa.
GEORGE LAPIDUS	Philadelphia, Pa.
RACHEL J. HAMILTON	Philadelphia, Pa.
CHARLES M. MORRIS	Philadelphia, Pa.
THOMAS F. JOHNSON	Philadelphia, Pa.
GRACE A. LEWIS	Philadelphia, Pa.
IRVING COBLENTZ	Pittsburgh, Pa.
WESLEY S. ROEDER	Portland, Oregon
GEORGE T. LODGE	San Francisco, Calif.
WILLIAM ADAMS	Seattle, Wash.
JEAN G. MIMS	Austin, Tex.
PAUL W. PENNINGROTH	Tampa, Fla.
DOROTHY P. MARQUIS	Detroit, Mich.
HEDDA BOLGER	Chicago, Ill.
I. LEON MAIZLISH	Chicago, Ill.

On Duty in Neuropsychiatric Hospitals:

Name	*Location*
IRENE HARMS	American Lake, Wash.
CECIL H. PATTERSON	Canadaigua, N. Y.
LAWRENCE M. BAKER	Lexington, Ky.
RAY D. CHARD	Lyons, N. J.
RALPH D. NORMAN	Lyons, N. J.
JOSEPH RESSNER	Mendota, Wis.
EDWARD A. MONAGHAN	Northport, L. I., N. Y.
GABRIEL ELIAS	Northport, L. I., N. Y.
EDWARD M. KRISE	Roseburg, Oregon
MARTIN MAYMAN	Topeka, Kans.
MARYLINE BARNARD	Topeka, Kans.
GEORGIANA BALL JENNINGS	Augusta, Ga.
ROBERT G. GIBBY	Fort Custer, Mich.
VERNON K. LUM	Fort Custer, Mich.
JULIAN L. PATHMAN	Downey, Ill.

On Duty in General Medical and Surgical Hospitals:

Name	*Location*
DAVID COHEN	Butler, Pa.
MARVIN W. WEBB	Bay Pines, Fla.
JOSEPH LEVI	Bronx, N. Y.
LEOPOLD WINTER	Bronx, N. Y.
IRVING HECHT	Bronx, N. Y.
BENJAMIN BLATT	Bronx, N. Y.
ESTHER C. WHITMAN	Framingham, Mass.
HARRY M. GRAYSON	Los Angeles, Calif.
CARL A. ANDERSON	Memphis, Tenn.
MILDRED B. MITCHELL	Minneapolis, Minn.
HELTON MCANDREW	Richmond, Va.
MARNE L. GROFF	Washington, D. C.
HOWARD FRIEDMAN	West Roxbury, Mass.
NEDRA CRAEGER	Atlanta, Ga.
RALPH BERDIE	Nashville, Tenn.
ALFRED D. MUELLER	Memphis, Tenn.
J. LEWIS YAEGER	Hines, Ill.
DONALD A. SCHULTZ	Van Nuys, Calif.
JAMES H. LAWRENCE	Framingham, Mass.

The department of psychology of Amherst College announces an opening, beginning with the fall term for an instructor to assist with the laboratory work of the introductory course and to teach an advanced course each semester. Interested candidates should write Dr. Theodore Koester, Department of Psychology, Amherst College, Amherst, Massachusetts.

The Connecticut State Hospital, Middletown, Connecticut has vacancies for assistant psychologists in the psychological laboratories under the direction of Jules D. Holzberg. The salary is $1860 to $2340 and full maintenance at the hospital is provided at a deduction of $316 a year. Individuals with a minimum of an MA in clinical psychology are preferred.

Applications should be submitted to the superintendent of the above institution.

The Wichita Guidance Center, Wichita, Kansas will have one senior and one junior internship open on or before June 1, 1947. The senior internship is open to applicants who have their Ph.D.'s or who are completing this degree and require supervised field work. The stipend is $150 a month. The junior internship is open to applicants with an M.A. or those who require *only* supervised field work to complete this degree. The stipend is $100 a month. Both internships may be renewed at expiration of the one-year apointment. Inquiries should be addressed to Dr. Jerry W. Carter, Jr., Director, Wichita Guidance Center, 3422 East Douglas Avenue, Wichita 8, Kansas.

The *Proceedings of the Maryland Conference on Military Psychology* are now off the press. In order to avoid the necessity for setting up arrangements for billing, it is requested that orders be accompanied by a check for $2.60 which includes mailing costs. Orders should be addressed to Students' Supply Store, University of Maryland, College Park, Maryland.

It has been suggested that it would be of great assistance to the editors of the journals of the APA if authors who submit manuscripts would read the article by Anderson and Valentine, The preparation of articles for publication in the journals of the American Psychological Association, *Psychol. Bull.*, 1944, **41**, 345–376. Particularly troublesome are the great varieties of forms in which the references are submitted in so many manuscripts. Reprints of the above article may be obtained from the Office of the Executive Secretary for ten cents a copy. Stamps are acceptable.

Copies of the *Directory of Applied Psychologists* published by the American Association for Applied Psychology in 1943 are still available. This directory lists former activities, academic training, societies, specialties, and the position of each psychologist in the AAAP at the time of publication. Copies may be secured for fifty cents from the Office of the Executive Secretary.

The Ann Arbor Press, printer of the APA Yearbook for the past several years, still promises early publication of the 1946–47 Yearbook. It will be mailed to all APA members as soon as the printer completes it.

The U. S. Public Health Service announces that three types of grants, providing funds for training, for research, and for community services, may soon be available under the National Mental Health Act.

The USPHS is authorized to make grants to institutions offering training in psychiatry, clinical psychology, psychiatric social work, and psychiatric nursing, for the purpose of improvement, expansion, and inauguration of training programs in these fields. Application forms and complete information may be obtained from the Training and Standards Section, Mental Hygiene Division, U. S. Public Health Service, Washington 25, D. C. Since the National Advisory Mental Health Council expects to take final action on these applications by the middle of April interested schools are urged to make their applications now.

The USPHS has been authorized to grant a total of 600 stipends this year to graduate students in the following fields. Stipends ranging from $1,000–$2,400 a year for clinical psychologists, psychiatric social workers, and psychiatric nurses and up to $3,600 for psychiatrists. These awards will be made through the institutions collaborating in this phase of the training program of the USPHS. Applicants are requested not to write to the training centers or the USPHS until the announcement of the institutions has been made, about May 1.

Grants for research on problems relevant to mental health may be made, upon the recommendation of the National Advisory Mental Health Council, to public and private institutions and to individuals. For application forms write to Research Grants Division, National Institute of Health, USPHS, Bethesda 14, Md.

Grants-in-aid will be made to States to assist in developing adequate mental health programs at the community level. Since the funds are handled by the mental health authority of each State, those interested in specific service projects should contact their State Mental Health Authority.

Funds to inaugurate actual operation of the programs depend on Congressional appropriations. The earliest date such funds may be available is July 1, 1947.

Convention Calendar

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

September 9–13, 1947; Detroit, Michigan

For information write to:

Dr. Dael Wolfle, American Psychological Association

1515 Massachusetts Avenue, Washington 5, D. C.

ROCKY MOUNTAIN BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

May 1–3, 1947; Colorado College, Colorado Springs

For information write to:

Dr. Lillian G. Portenier, Department of Psychology

University of Wyoming, Laramie, Wyoming

THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

April 4–5, 1947; St. Louis, Missouri

For information write to:

Dr. Joseph Weitz, Sophie Newcomb College

Tulane University, New Orleans, Louisiana

SOUTHWESTERN PSYCHOLOGICAL ASSOCIATION

April 4–5, 1947; Dallas, Texas

For information write to:

Dr. L. B. Hoisington, Department of Psychology

University of Oklahoma, Norman, Oklahoma

MIDWESTERN PSYCHOLOGICAL ASSOCIATION

May 2–3, 1947; Edgewater Beach Hotel, Chicago, Illinois

For information write to:

Dr. Claude E. Buxton, Department of Psychology

Northwestern University, Evanston, Illinois

WESTERN PSYCHOLOGICAL ASSOCIATION

June 19–20, 1947; San Diego, California

For information write to:

Dr. Lester F. Beck, Department of Psychology

University of Oregon, Eugene, Oregon

ILLINOIS ASSOCIATION FOR APPLIED PSYCHOLOGY

May 1, 1947; Chicago, Illinois

For information write to:

Dr. Milton A. Saffir, Secretary

55 East Washington St., Psychological Guidance Center,

Chicago 2, Illinois

EASTERN PSYCHOLOGICAL ASSOCIATION

April 25–26, 1947; Chalfonte-Haddon Hall
Atlantic City, New Jersey

For information write to:

Dr. J. McV. Hunt, Institute of Welfare Research

Community Service Society

105 East 22nd Street, New York 10, New York

SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

April 9–10, 1947; Princeton University
Princeton, New Jersey

Closed session for members only

For information write to:

Dr. Samuel W. Fernberger, University of Pennsylvania

Philadelphia, Pennsylvania

CANADIAN PSYCHOLOGICAL ASSOCIATION

April 10–12, 1947; Ottawa, Ontario, Canada

For information write to:

Dr. R. C. Myers, 100 St. George Street

Toronto, Ontario, Canada

NATIONAL COUNCIL ON REHABILITATION

April 29–30, 1947; The Coronado Hotel
St. Louis, Missouri

For information write to:

Mr. Holland Hudson, Secretary-Treasurer

National Council on Rehabilitation

1790 Broadway, New York 19, New York

THE NATIONAL VOCATIONAL GUIDANCE ASSOCIATION

March 28–30, 1947; Deshler-Wallick Hotel
Columbus, Ohio

For information write to:

Miss Christine Melcher, Secretary

82 Beaver Street, New York 5, New York

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 | April, 1947 | Number 4

In this Issue

Fifty-Fifth Annual Meeting of the American Psychological Association 119

Call for Papers, Fifty-Fifth Annual Meeting of The American Psychological Association: THE CONVENTION PROGRAM COMMITTEE 120

An Analysis of Action on Science Legislation in the Last Congress: ROBERT W. LEEPER. 127

The Foreign Language Requirement for the Ph.D.: CHARLES BIRD, WILLIAM T. HERON, PAUL E. MEEHL, DONALD G. PATERSON 136

Psychology and Psychiatry: KARL MENNINGER 139

Validation of the General Clerical Abilities Test for Selection and Placement of War Department Civilian Personnel: STAFF, PERSONNEL RESEARCH SECTION, PERSONNEL RESEARCH AND PROCEDURES BRANCH, ADJUTANT GENERAL'S OFFICE 141

Some Areas of Caution for the Psychology Student: THEODORE LANDSMAN AND MANFRED FRANK DE MARTINO 145

Comment 148

Practice in Personnel Psychology: GERALD CARTER 148

A New Type of Elementary Course: F. K. BERRIEN 148

Across the Secretary's Desk 151

Psychological Notes and News 152

Convention Calendar 156

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

FIFTY-FIFTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

DETROIT, MICHIGAN, SEPTEMBER 9, 10, 11, 12, 13, 1947

PRELIMINARY ANNOUNCEMENTS

THE fifty-fifth annual meeting of the American Psychological Association will be held in Detroit, Michigan from Tuesday September 9 through Saturday September 13. Meetings will begin on Tuesday morning. The last sessions will close Saturday noon. Headquarters will be at the Hotel Statler.

TRANSPORTATION: Railroads serving Detroit are the Baltimore and Ohio, Chesapeak and Ohio, Grand Trunk, New York Central, Pennsylvania-Wabash, and Pere Marquette. Airlines reaching Detroit are the American Airlines, Capitol Lines, Michigan Central, Eastern, NorthWestern, Southern, TWA, and the United Airline. The Greyhound Bus Line and the Detroit and Cleveland steamers also serve Detroit.

Those driving to Detroit will in practically all cases approach the city from the direction of Chicago or the direction of Toledo. Those coming from the Chicago direction may take U. S. Highway 12 or 112. Those coming from the Toledo direction may take U. S. Highway 23, 24, or 25.

HOTEL ROOMS: The Detroit Convention and Tourist Bureau has arranged with the hotels listed below to reserve rooms for members attending the APA meeting. All of these hotels are within five blocks of each other.

Room reservations should be made by writing directly to the hotel of your choice. Rooms will be reserved in the order of application, so early reservation is desirable. Each member will be notified directly by the hotel as soon as the reservation has been made. If the hotel to which you write can not accommodate you it will attempt to secure a reservation in another hotel.

In requesting room reservations tell the hotel:

1. When you expect to arrive.
2. When you expect to leave.
3. The kind of room you want.
4. The name or names of the person or persons who will share the room with you. (It will be necessary to assign two people to most twin-bed rooms. Selecting your own roommate in advance is recommended. If you can not do that, tell the hotel whether or not they have your permission to assign another member to share the room with you if that becomes necessary in order to accommodate all attending the meeting.)

MEALS: Restaurants in the hotels and nearby will be open for all meals. Special luncheons and dinners may be arranged by writing to Edward T. Raney, Mich. S. Employment Service, Detroit, Michigan. If such arrangements are completed by June 9 an announcement can be included in the printed program.

COMMITTEE ON LOCAL ARRANGEMENTS: The Committee on Local Arrangements is listed below. All correspondence can be directed to the Chairman.

Edward T. Raney, *Chairman*, Michigan State Employment Service

John Rapparlie, United States Rubber Company, Registration and Information Desk

Claude L. Nemzek, University of Detroit, Reception

Alexander A. Schneiders, University of Detroit, Preparation of information

Chester E. Evans, General Motors Corporation, Publicity

Wilson McTeer, Wayne University, Exhibits

Ruth Hubbard, Consultation Bureau, Entertainment.

Hotel	Address	No. of rooms	No. of rooms reserved for A.P.A.	Minimum Price for: Single	Double	Twin-Bed
Barlum Tower	Cadillac Square and Bates Street	610	50	$2.50	$3.50	$6.00
Book-Cadillac	1142 Washington Blvd.	1200	150	3.50	6.00	6.50
Fort Shelby	525 West Lafayette	900	50	3.00	5.00	6.00
Statler	1539 Washington Blvd.	1000	225	3.50	6.00	7.00
Tuller	521 Park Avenue	800	100	2.75	4.50	5.50
Wolverine	53 East Elizabeth	500	75	2.50	4.00	5.00

CALL FOR PAPERS
FIFTY-FIFTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

The Convention Program Committee

DOUGLAS H. FRYER, *Chairman*, GEORGE A. KELLY, IRVIN L. CHILD, WILLARD C. OLSON
DONALD G. MARQUIS, AND EDWARD T. RANEY

THE Convention Program Committee of the American Psychological Association presents this announcement of program plans and the Call for Papers by publication in the AMERICAN PSYCHOLOGIST. No other Call for Papers will be distributed. There will be no mailing to the individual members as has been the custom. The complete program will be published in the August AMERICAN PSYCHOLOGIST.

The Convention Program has mushroomed in recent years to an extent causing concern of the membership that its true functions will be lost. This year's Convention Program Committee has reviewed many suggestions of changes and criticisms of the organization of the program and, as a result, the following statement is made of general functions and procedures for the 1947 program at Detroit, September 9 to 13, 1947.

I. FUNCTIONS

The general purposes of the Convention Program are outlined as follows:

A. Individual Reports of Research

This is the traditional sounding-board function of the APA Convention, which provides members with an opportunity to make early announcement of scientific results which may affect the work of others, and to make themselves known personally to other members working in their areas of research.

B. Technical Problem Symposia

This is the kind of program developed in the AAAP, to establish a plan of research for the solution of technical problems, but which is equally effective in consideration of theoretical psychological problems. When conceived as a public round-table on a large technical area, as often has occurred in the past, e.g. *measurement of accident proneness, introspective methods, personality test construction*, it usually has been found unsatisfactory; this form of Symposium is to be avoided. The Technical Problem Symposia of the APA Convention Program will be limited to the statement of a specific problem, e.g. *indices of conditioning, equating electric shock stimuli, the forced-choice technique in merit rating, criteria for equating muscle tension measures.* The Symposia are to be organized in the following manner: one or two specialists will be invited to present the technical problem or problems; a small group of members will be invited to discuss the problem (all are expected to be familiar with any research on the problem and no attempt will be made to present individual research papers); the chairman will direct the discussion and summarize at the end in a plan of action.

C. Theoretical Communications

This is the kind of program expected in addresses of the APA and Divisional Presidents. Other mature presentations of psychological theory which serve an integrative function in psychological thinking will be encouraged by the Convention Program Committee.

D. Public Addresses

This form of program is planned for members, their families and friends, to serve the function of entertainment and orientation into allied scientific and technical areas.

E. Apparatus Exhibits

This form of program is a traditional feature of the APA, but it has become less prominent as the Association has increased in size. Its original purpose was the same as *A* above, to acquaint members with the

technical developments of research. Later, apparatus companies and book and test publishers took over in large measure the exhibition of apparatus and procedures with the purpose of acquainting members of developments in commercial construction. When the Convention Program is held in hotels, as will be true this year, there is a charge by the hotel to all exhibitors according to the space required. The apparatus exhibit is continued as a part of the Convention Program with the two purposes of exhibiting technical developments by individual members and by commercial companies.

II. PROCEDURE

A. *Individual Reports of Research*

1. *General Call for Papers.* A general Call for Papers is issued below by the Convention Program Committee to all members of the Association. Regulations governing the preparation of abstracts will be found in Section III.

Abstracts of papers received in response to this general Call for Papers will be judged anonymously on their relative merits by several judges under the direction of the Convention Program Committee. Members submitting abstracts will be notified of acceptance or rejection. The Convention Program Committee has appointed a subcommittee, consisting of Robert J. Wherry, chairman, Hubert Brogden, Edward E. Cureton, Edwin R. Henry, and Erwin K. Taylor, to prepare a merit rating system which will be used by the Convention Program Committee for this purpose. This subcommittee has prepared the following statement of factors on which the rating of abstracts will be made.

Factors for Rating Abstracts

a. *Basic Data.* Is the paper based on sufficient data, facts, cases, observations (researches if a theoretical paper) to accomplish its purpose?

b. *Treatment.* Are the conclusions based upon the proper quantitative analysis, or proper logical deductions, or proper diagnosis?

c. *Contribution.* Does this paper present some *new* conclusion, method, procedure, apparatus, etc.?

d. *Interest.* What percentage of an appropriate Division of the APA to which this paper might be presented would be interested in listening to the paper?

2. *Division Call for Papers.* Division Program Committees have been encouraged to issue Calls for Papers to their members. Division Calls for Papers will be found below for several of the Divisions of the APA. Divisions issuing Calls for Papers will take full responsibility for the selection of papers from the abstracts submitted directly to the Division. (Note this plan is different from 1946, when all papers were mailed to the APA and then submitted to the appropriate Division.) Members submitting abstracts to a Division will follow the regulations for the preparation of abstracts given in Section III below. Members of Divisions submitting an abstract in response to a Division Call for Papers may not submit a duplicate or second abstract to another Division or to the Convention Program Committee. If an abstract is sent to a Division Program Committee, it must be in the area of the Division. All abstracts sent to the Washington office will be considered for APA programs; none will be forwarded to Divisions.

3. *Deadlines.* All abstracts of papers, either submitted to Divisions or to the Convention Program Committee, will be prepared in triplicate on special forms bound in the center of this issue of the AMERICAN PSYCHOLOGIST. The deadline for submitting abstracts to the Convention Program Committee is June 9, 1947 in the office of the Executive Secretary; to the various Division Program Committees it is stated as part of the Division Call for Papers on pages 124–126. These are inflexible deadlines. The Convention Program Committee will meet in Washington, D. C. during the week beginning June 9 and will at that time read all abstracts and prepare the program for printing.

4. *Motion Picture, Lantern Slide, and Film Strip Presentations.* Motion picture, slide, and film strip presentations of research or technical materials will be scheduled in separate programs. Facilities will be available for 16 mm sound and silent motion pictures and for 16 mm and 35 mm film strips. Members desiring to present films, film strips, or lantern slides should send them to C. R. Carpenter, Department of Psychology, State College, Pennsylvania. The deadline for receipt of films is June 2, 1947. The APA Audio-Visual Aids Committee, of which Dr. Carpenter is chairman, will select the films to be shown and will schedule their presentation.

5. *Schedule.* Individual reports of research will be scheduled in groups of four papers for each program section, throughout the Convention Program, as follows:

Morning	*Afternoon*
8:50 to 9:50	1:40 to 2:40
10:00 to 11:00	2:50 to 3:50
11:10 to 12:10	4:00 to 5:00

Abstracts submitted to and accepted by the Divisions will be arranged in groups of four and will be scheduled in the same manner.

It is expected through the grouping of a limited number (four) of papers on similar research or theory and allowing sufficient time for travel between Sections that much of the distracting movement of members between Sections will be eliminated. The schedule allows twelve minutes for presentation of a paper and three minutes for discussion. This schedule will be arbitrarily adhered to by Program Chairmen.

6. *Illustrative Materials.* Those members desiring to use illustrative materials in connection with the presentation of papers are advised to prepare it in the form of pass-outs instead of lantern slides. It will be impossible to assign a lantern to each Program Section. Scheduling papers according to requirements for lantern presentation prohibits scheduling according to similarity of content of papers.

B. Technical Problem Symposia

1. Divisions will have complete responsibility for development of the Technical Problem Symposia of the Convention Program. They are expected to arrange one or more Technical Problem Symposia within the area of the activities of the Division, according to the purpose indicated under "I, *B*" above.

2. *Schedule.* Technical Problem Symposia will be scheduled on a two-hour basis throughout the Convention Program as follows:

Morning	*Afternoon*
10:00 to 12:00	3:00 to 5:00

3. *Regulations.* Division Programs for Symposia are to be published in the convention Program in the following manner:

Title of symposium
Sponsored by Division
Fifty-word description of problem
Name of chairman
Names of participants

The deadline for Division Programs of Symposia is June 2, 1947 in the office of the Executive Secretary.

C. Theoretical Communications

1. *Explanation.* The APA Presidential Address will be scheduled on Thursday evening, September 11, 1947 without conflicting programs. A reception for the President will follow his address. Division Presidential addresses will be scheduled on Tuesday evening, September 9, 1947 at 7:00, 8:00, and 9:00 o'clock with least conflict of interests between Divisions scheduled at the same time. Business meetings of Divisions will precede or follow the Division President's Address according to a staggered plan of scheduling. Division Secretaries have been asked to submit titles for the addresses of the Division Presidents to the Executive Secretary not later than June 2, 1947.

2. *Theoretical Addresses.* The Convention Program Committee has invited suggestions from the Divisions of topics and speakers for theoretical addresses according to the purposes stated in "I, *C*" above. Two parallel sessions of two 45-minute theoretical addresses each are planned for Wednesday evening, September 10, 1947. All participants will be invited by the Convention Program Committee. Individual members who have suggestions for theoretical addresses should send them to Donald G. Marquis, Department of Psychology, University of Michigan, Ann Arbor, Michigan not later than May 1, 1947.

D. Public Addresses

The Convention Program Committee has invited suggestions from the Divisions of topics and speakers for public addresses according to the purpose stated in "I, *D*" above. Two parallel public addresses are planned for Friday evening, September 12, 1947. Speakers will be invited by the Convention Program Committee. Individual members who have suggestions for public addresses should send them to Donald G. Marquis, Department of Psychology, University of Michigan, Ann Arbor, Michigan, not later than May 1, 1947.

E. Apparatus Exhibits

According to the purpose as stated in "I, *E*" above, individual members and commercial companies are invited to exhibit apparatus and procedures as a part of the Convention Program. Interested individuals and companies should communicate their plans for exhibits to Edward T. Raney, U. S. Employment Service, Detroit, Michigan by August 16, 1947, from whom space allotments and regulations for exhibits will be received. Exhibitors will be charged five cents per square foot per day by the hotel, and will have to pay the costs of local storage, cartage, and the construction of exhibition booths that satisfy local requirements.

III. REGULATIONS FOR ABSTRACTS

The following rules govern the consideration of abstracts by Convention or Division Program Committees.

1. Abstracts will be typed double-spaced in triplicate on the Form for Abstracts which is bound in the center of this issue of the AMERICAN PSYCHOLOGIST.

2. Abstracts must not include tables or drawings.

3. Each member is limited to one abstract except in instances where joint authorship exists, when he is limited to presenting one paper on the program. His name may, however, appear as the co-author of another paper presented by another member.

4. Abstracts will be organized, if possible, according to the following outline:

Problem
Population
Procedure
Results
Conclusions

This form is not intended to preclude case studies, theoretical papers, surveys, descriptions of new tests or techniques, or other suitable papers. Where these can appropriately be abstracted in terms of the outline given above, doing so will facilitate the task of rating abstracts. If the nature of the paper makes the outline inappropriate, it can be disregarded.

5. Papers may not be presented by proxy. Each abstract will carry the signature of the author who guarantees to present the paper.

6. By action of the Association, abstracts may be accepted only from members. Multiple authorship will be permitted only (a) in case all authors belong to the Association or (b) in case the paper is read by one author who is a member, and the other author is a trained and qualified investigator in an allied experimental science as shown by his holding membership in the national scientific society in his own field. Otherwise, acknowledgement of aid by a non-member may be made in the abstract itself.

7. By vote of the Association, papers previously read at sectional meetings are not acceptable for the Convention program, but this action does not preclude acceptance of a paper presenting additional experimental results on a topic concerning which preliminary report has been made at a sectional meeting.

8. Neither motion pictures nor lantern slides can be shown as part of the report.

IV. GENERAL CALL FOR PAPERS AND DEADLINES FOR PROGRAM MATERIALS

Abstracts of papers, suggestions for Technical Problem Symposia, theoretical and popular addresses, films and film strips, and requests for exhibit space should be submitted to the person and before the deadline indicated below for each.

Program Material	*Mail to:*	*Deadline for receipt*
Abstracts of papers submitted to APA Convention Program Committee	American Psychological Association 1515 Massachusetts Ave. N.W. Washington 5, D. C.	June 9, 1947
Abstracts of papers submitted to Divisions	Secretary or Program Committee chairman of the appropriate Division (See pages 124–126)	See pages 124–126
Motion pictures (sound or silent), slides, and film strips	C. R. Carpenter Department of Psychology State College, Pennsylvania	June 2, 1947
Suggestions for Technical Problems Symposia	Secretary of appropriate Division	May 1, 1947
Division sponsored Programs of Technical Problems Symposia	American Psychological Association 1515 Massachusetts Ave. N.W. Washington 5, D. C.	June 2, 1947

Program Material	*Mail to:*	*Deadline for receipt*
Suggestions for theoretical addresses	Donald G. Marquis Department of Psychology University of Michigan Ann Arbor, Michigan	May 1, 1947
Titles of Divisional Presidential Addresses	American Psychological Association 1515 Massachusetts Ave. N.W. Washington 5, D. C.	June 2, 1947
Suggestions for public addresses	Donald G. Marquis Department of Psychology University of Michigan Ann Arbor, Michigan	May 1, 1947
Apparatus exhibits	Edward T. Raney U. S. Employment Service Detroit, Michigan	August 16, 1947

V. DIVISION CALLS FOR PAPERS

The Divisions named below have prepared the following Calls for Papers and statements of program plans. Divisions not listed below are not issuing separate Calls for Papers but may plan Technical Problem Symposia on topics of interest to the Division.

2. *Division on the Teaching of Psychology*

The Division on the Teaching of Psychology is planning a program consisting of two or three somewhat longer presentations and discussions of selected topics. The Division, therefore, is not issuing the usual call for papers but will welcome suggestions concerning topics and speakers.

Suggestions should be sent to the Secretary of the Division, Edna Heidbreder, Wellesley College, Wellesley, Massachusetts.

5. *Division on Evaluation and Measurement*

Abstracts submitted to the Division on Evaluation and Measurement should conform to the regulations printed above as part of the general Call for Papers. They should be mailed to Robert L. Thorndike, Teachers College, Columbia University, New York 27, New York. The deadline is June 2, 1947.

6. *Division of Physiological and Comparative Psychology*

The Division of Physiological and Comparative Psychology requests that all persons desiring to present papers bearing on the general field of Physiological and Comparative Psychology at the 1947 meetings of the American Psychological Association submit their abstracts in triplicate to the Secretary of the Division, Harry F. Harlow, Department of Psychology, University of Wisconsin, Madison, Wisconsin. The abstracts must be in the hands of the Division Secretary by May 22. The abstracts must follow the prescribed form outlined above in the general Call for Papers.

7. *Division on Childhood and Adolescence*

Abstracts submitted to the Division on Childhood and Adolescence should conform to the regulations printed above as part of the general Call for Papers. They should be mailed to Arthur T. Jersild, Teachers College, Columbia University, New York 27, New York. The deadline is June 2, 1947.

8. *Society for the Psychological Study of Social Issues*

As a regular division within the American Psychological Association, SPSSI plans to participate in the 1947 national convention by presenting, in addition to its usual program of symposia, a number of sessions devoted to individual reports. Each session will include four individual reports grouped together according to their relationship to a general research area.

In view of the stated purpose of SPSSI, the program committee believes that the reports in these sessions should consist of research and theoretical studies which illustrate the contribution of psychology to the understanding and solution of significant social problems of our day. In order to facilitate grouping the reports, five central research areas have been formulated, each of which, we hope, can be explored in a single session. These research areas are as follows:

1) Problems of Re-educating People in the Democratic Way of Life (for example, the people of Germany and Japan)

2) Methods of Combating Racial and Religious Prejudice

3) Methods of Increasing Participation of Individuals in the Processes of Democratic Government

4) Methods of Educating the Public Concerning Basic Social Issues (for example, atomic energy)

5) Contributions of Psychoanalytic Theory to the Study of Social Issues

All members of SPSSI and of the APA and in collaboration, if desired with research workers in allied social sciences are invited to contribute papers which fall within the broad scope of any one of the above areas. The program committee will also welcome, for possible integration into the sessions, other papers which are consistent with the objectives and interests of the Division. All abstracts should follow the form prescribed in the general Call for Papers and should be received not later than Friday, May 23. Abstracts should be mailed to Daniel Katz, 36 Berkshire Road, Rockville Centre, N. Y.

For the Program Committee
Daniel Brower
Angus Campbell
John Harding
Evelyn Raskin, *Chairman*

10. *Division of Esthetics*

Abstracts submitted to the Division of Esthetics should conform to the regulations printed above as part of the general Call for Papers. They should be mailed to Herbert S. Langfeld, Princeton University, Princeton, New Jersey. The deadline is May 26, 1947.

12. *Division of Clinical and Abnormal Psychology*

The Division solicits abstracts of papers which authors may wish to present at the September meeting. Papers should, of course, be within the area of the Division. Abstracts should follow the prescribed form outlined in the general Call for Papers and must be in the hands of the chairman of the Division Program Committee (912 South Wood Street, Chicago 12) on or before May 10, 1947.

Donald B. Lindsley
David Rapaport
Robert A. Young
David Shakow, *Chairman*

14. *Division of Industrial and Business Psychology*

Abstracts submitted to the Division of Industrial and Business Psychology should conform to the regulations printed above as part of the general Call for Papers. They should be mailed to Floyd L. Ruch, Department of Psychology, University of Southern California, Los Angeles, California. The deadline is May 26, 1947.

16. *Division of School Psychologists*

Abstracts submitted to the Division of School Psychologists should conform to the regulations printed above as part of the general Call for Papers. They should be mailed to Bertha M. Luckey, Psychological Service, Board of Education, Cleveland, Ohio. The deadline is May 26, 1947.

17. *Division of Counseling and Guidance Psychologists*

The Program Committee of Division 17 is issuing a call for papers for presentation at the September, 1947 meetings.

1) Individual reports of research. In accordance with the program plans of the APA, abstracts of individual research papers are being called for in the area of diagnostic and therapeutic procedures and in other areas of interest to the membership of this division. In order to meet association deadlines, these abstracts must be in the hands of Harold Edgerton, Department of Psychology, Ohio State University, Columbus, Ohio by 1 May, 1947. No abstracts received after that time can be considered for presentation. Abstracts will be reviewed by the members of the Program Committee of this division, and those selected for presentation will be forwarded to the Executive Secretary of the APA by 9 June.

2) Technical Problem Symposia. The Program Committee hopes to arrange symposia from the following list of six topics:

a. Grades vs. achievement tests as criterion measures.

b. Studies of recorded clinic or counseling interviews.

c. Counseling in industrial firms.

d. Community counseling programs.

e. Adaptation of military tests to school programs.

f. Evaluation of counseling programs.

Members of this division interested in participating in these symposia should get in touch with the Division Program Chairman, Dr. Edgerton, no later than 2 May so that the Executive Secretary of the APA may be notified of symposia membership by 1 June, 1947. The Program Committee will

task is to avoid any repetition of such a tactical blunder as Dr. Meyerhoff believes was responsible for the loss of S. 1850. Actually, however, the situation is not nearly this simple. When the separate amendments were considered in the Senate, the vote on these in some cases was not nearly as one-sided as was the final vote on the whole bill. Therefore, if we know merely what the final vote was, we are not well informed. Any real understanding of what to anticipate in this Congress must take into account the more detailed information which we can get from the record of the whole series of actions of July 1–3. Let us therefore review this material.

When the National Science Foundation bill was taken up by the Senate, an amendment was first offered in the form of a substitute bill. It was offered by Senator Alexander Smith of New Jersey, with the sponsorship also of Senators Byrd of Virginia, Walsh of Massachusets, Willis of Indiana, Hart of Connecticut, and McClellan of Arkansas. The motion to adopt this substitute bill was lost by a 24 to 39 vote. An analysis of this vote could be made, but the main issues were presented later in a series of more restricted amendments, and it is more informative to study the voting on these.

The first of these more particular amendments provided that the Science Foundation should be managed, not primarily by a single administrator appointed by the President, but by a Board which in turn would select its own executive agent. This amendment was debated at some length. Senator Smith maintained that scientists generally favored the board type of control, but that they had finally assented to the single-administrator type of control because they had been assured that Congress probably would approve only of that arrangement. Senator Kilgore replied to this by saying:

> "I, for one, resent the implication that men like Dr. Bush, Dr. Bowman, and others can be blackjacked into an agreement in a sub-committee. No such thing happened. . . ." (Congr. Record, 79th Congress, 2d session, p. 8264).

Perhaps this is so. However, it is noteworthy that even Senator Kilgore himself had made some extremely strong statements on the matter earlier. Thus, in an article in *Science* of Dec. 21, 1945, he had said:

> ". . . the *sine-qua-non* of any Government agency is that its powers be vested in full-time Government employees whose principal responsibility is their public function, and who have severed all previous connections with private financial interests. From the Government standpoint, it is unthinkable that the powers of the proposed National Science Foundation be vested in a board of non-compensated persons, whose principal responsibilities would lie in some other direction, as some scientists have so urgently and honestly recommended." (*162*, p. 633).

At any rate, a great many of his fellow Senators do not seem to have been impressed by his argument that he resented the suggestion that the scientists might have been pressured into accepting a plan of control which did not represent their first choice. When a vote was taken on the amendment to provide a board type of control, the motion was lost by a vote of only 34 to 35.

What is perhaps still more important, in view of the subsequent shifts in relative party strengths following the November 1946 elections, is that among the Republicans the vote was 23 to 5 in favor of the board plan of control. The majority of Southern Democrats also favored the board control. Among the Democrats as a whole, the vote was 29 to 11 against this amendment. In the November elections, however, eight of these 29 Democrats (along with the one Progressive—LaFollette) opposing this amendment were replaced by Republicans. Only a few of those voting for the amendment have been replaced by others who might perhaps take an opposite stand.

These more specific data about the vote on this amendment give us something to puzzle about. Do they signify that, if the next Congress adopts a science bill, it will definitely favor a shift to a board plan of control? Do these actions reflect a real faith in the value of decentralizations of control wherever possible? Were the Republicans and Southern Democrats merely reacting adversely to the temporary prospect of having another powerful administrator appointed by President Truman? It is hard to say. Conceivably, since the Republicans have some prospect soon of deciding such appointments, they may now tend to favor the S. 1850 plan, whereby the National Science Foundation would be administered by an executive officer who, as Senator Magnuson said, would have virtually the status of a member of the President's cabinet. Or, it may really be that the permanent view of the Republican group

has been rather well expressed by Mr. Clarence J. Brown, a Republican member of the House of Representatives. In the hearings on the related bill, H. R. 6448, which proposed a board type of control, Mr. Brown said:

> "My own opinion is that the great value of this whole project is that the Government will not be running it, and I would like to try something in this country that the Government would not run. That is an experiment in itself. It is Government money, but the program would be run by somebody else." (Hearings on H. R. 6448; May 28–29, 1946; p. 40).

At any rate, in view of all this, it would seem very reasonable for the scientific groups to reconsider the possibility of a board type of control, with the executive head of the organization elected by the board and responsible to them. This Congress probably will either favor this plan or at least be willing to approve it, if it appears that the scientists are convinced that it would give a better means of control.

A next amendment from Senator Hart of Connecticut was accepted without a recorded vote. It removed the provision permitting the administrator, with the advice of the Board, to establish perhaps as many as three additional Divisions beyond those named in the bill.

An amendment to change the provisions on patent rights was then debated. In S. 1850, the sections regarding patent rights had stated in rather strong terms that any discoveries, inventions, or findings resulting from publicly-subsidized research should be dedicated to the public on a royalty-free basis, except in certain cases where private funds had also contributed materially to the production of such advances. Senator Smith's amendment, on the other hand, proposed a larger measure of discretionary power for the Science Foundation. It provided in more general terms that:

> "Each contract . . . shall contain provisions governing the disposition of inventions produced thereunder in a manner calculated to protect the public interest and the equities of the individual or organization with which the contract is executed" (Congr. Record, pp. 8336, 8346).

It is odd, in a way, that the Republicans were so interested in this issue. For when the matter of a social-science division was being debated, Senator Smith and his associates insisted that the bill was a bill for subsidizing research only in pure science, not also in applied science. "We are trying to subsidize pure science, the discovery of truth" (Congr. Record, p. 8349). It was partly from this consideration that they argued that support should not be extended to social-science research. Apparently they did not feel too sure about this, however, because the patent issue was viewed with considerable interest.

This amendment to weaken the patent provision was lost by a vote of 31 to 41. However, it is noteworthy that the Republicans voted 25 to 4 to change the patent provisions. The Democrats voted 36 to 6 to keep the patent provisions as in S. 1850. What is more, in the November elections, 9 of the non-Republican Senators voting for the S. 1850 patent provisions have been replaced by Republicans. And among the 24 Senators absent and not voting, 12 were either Republicans, or Democrats who have been replaced by Republicans in this Congress. If there has been no shift of opinion among these men in the meantime, therefore, we might well expect that this Senate will reverse the earlier vote on the patent issue.

The next amendment proposed an elimination of a Social Science Division from the list of Divisions provided in the bill. This question received lengthy discussion (see Congr. Record, pp. 8157–8, 8164–8, 8216–7, 8232–3, 8237–9, 8263, 8348–50). In defence of the S. 1850 provision, Senators Kilgore and Magnuson pointed out that in the hearings on the bill it had been urged that provision should be made for support of such research as soon as a program could be constructed and could find approval by the other members of the National Science Foundation. As Senator Kilgore said,

> "The feeling was that the natural sciences and the social sciences were linked together; that it was very hard to separate them under two separate foundations, and that therefore they should be included in this measure, with the provision, however, that their program must be submitted and must be approved before any work can be done." (Congr. Record, p. 8350).

Still more strongly, the idea of a social science division was supported by Senator Fulbright of Arkansas and Senator Thomas of Utah. For instance, Fulbright said,

> "It seems to me that social science is a recognized field of study now. It has been sadly neglected for the very reason that it does not yield immediate financial returns

such as the invention, for example, of a . . . useful gadget. For that reason it needs governmental assistance a great deal more than mechanical engineering does, because the study of mechanical engineering brings its own rewards under our commercial system. . . . If one looks at the situation in the world today, or even at the situation in our Nation today, he will find that the difficulties lie not with respect to the production of tangible things, but with those human relations which enable us to get along together" (Congr. Record, pp. 8164–5).

However, a great many objections were raised to this part of the bill. It was objected that the social sciences could not be defined. Even Senator Fulbright had his difficulties in trying to help on this. When he was asked to define social sciences, he started well enough by saying, "I would say such studies as are concerned primarily with human relationships are studies in social science." But then he went on to say further:

"Politics is a fundamental social science. I confess that the word 'science' is not properly used in that field in that it is not of the same nature as mathematics" (Congr. Record, p. 8164).

This is odd reasoning, because chemistry and geology and any similar field would have a hard time showing that they are "of the same nature as mathematics." Still further he said,

"I asked an able scientist yesterday if he would define social science. I had been worrying about that. He said in his definition, 'In the first place, I would not call it science. What is commonly called social science is one individual or a group of individuals telling another group how they should live.'"

At that, Senator Willis interjected, "I wonder if that is not a pretty good definition." Then, instead of correcting the implications of the statement, Fulbright continued, as though assenting:

"Is that not just about what Government does? Government by a majority means that the majority tells the minority what to do." (Congr. Record, p. 8164).

Because of this difficulty of definition, it was urged that the inclusion of the social sciences would open the way for all sorts of study. For example, Mr. Hart said:

"Under the heading of social sciences, many things may present claims for inclusion. There are anthropology, various aspects of psychology, certain political and economic factors, and even racial and religious matters." (Southern Senators take note! —and apparently they did.) "In fact, . . . A case can be made for philosophy, for literature, for the arts, and there is no limit" (Congr. Record, p. 8216).

It was questioned whether the social sciences could accomplish anything important. Senator Willis, for example, argued that the program should be confined

". . . to the fields in which we know there is a practical and a crying need for development, and leave matters which are of doubtful value to be taken up after we have tested the plan on things of known value."

It was urged that social science leads too easily to "isms" and quackeries and that the work of the Foundation would be apt to be discredited because of types of studies that might be done by the Social Science Division. A lot of emphasis was put on the idea that social-science research would be a matter of applied science, and that the bill was intended as a means of fostering only pure science. It is hard to see how this could be maintained, when the bill also provided for "a Division of Health and Medical Sciences, a Division of National Defense, a Division of Engineering and Technology." Apparently, consistency was a jewel not highly prized in these discussions.

Another objection was that the original report by Vannevar Bush had not suggested research in the social sciences. Repeatedly the assertion was made, even more strongly, that the natural scientists were opposed, as a group, to the inclusion of the social sciences. In support of this assertion, the communications from the so-called Bowman committee were repeatedly cited (pp. 8232, 8233, 8238–9, 8263). Thus, Senator Taft said,

"Finally, Mr. President, the scientists disapproved of the establishment of a Division of Social Sciences. But they were told that they must accept what the subcommittee of the Committee on Military Affairs recommended, or else they would not get any bill" (Congr. Record, p. 8263).

It was urged that social sciences should be cared for, if at all, under a separate foundation. Thus, Senator Hart contended,

"There is no connection between the social sciences, a very abstract field, and the concrete field which constitutes the other subjects to be dealt with by the proposed science foundation. . . . no board, no administrative organization which we could set up could possibly

be adequately qualified to administer such policies and carry on work in two fields so absolutely diverse" (Congr. Record, p. 8349).

When this amendment came to vote, it was passed by a vote of 46 to 26. The Republicans voted 25 to 4 to omit the social sciences. Southern Democrats voted 14 to 3 to omit the social sciences. In other words, the Social Science Division was eliminated by these two groups—the Republicans and the Democratic Senators from the Southern states. Senators outside of these two groups voted 19 to 7 in favor of having a Division of Social Sciences. Of this number, five have been replaced by Republicans in the recent election. Therefore, if provision is made in a further bill for a Division of Social Sciences, it can probably come only through a change of stand by the Republican group.

Another amendment by Senator Hart provided that scholarships or fellowships should be granted only to graduate students, and not also to assist students to finance their undergraduate work. This amendment was defeated by a vote of 42–27. The vote again, however, was primarily along party lines. The Republicans, 20 to 6, favored giving merely graduate fellowships. The Democrats, 35 to 7, favored the more extensive (and admittedly more expensive) program provided in S. 1850.

A last amendment by Senator Smith proposed that the funds should be distributed without any requirement referring to geographical considerations. S. 1850, on the other hand, provided (roughly speaking) that 10% of all funds should be made available in equal amounts to all states, and that 15% should be available to the various states in proportion to their respective populations, these sums to be available merely to tax-supported colleges and universities. The amendment was rejected. No record of the vote was taken, but the discussion indicates that the vote was probably along much the same lines as on the amendment mentioned just above.

The National Science Foundation bill then came to a vote as a whole, and was passed by a vote of 48 to 18. Almost the entire adverse vote was Republican. From this party, 16 members voted *against* the bill, 10 for it. Among the Democrats, only O'Daniel of Texas and McKellar of Tennessee voted with the larger number of Republicans; 37 other Democratic Senators, both from the South and from the North, voted for it.

Even with the shifts in the Senate from the recent election, it therefore appears that a national science foundation bill could again secure a majority vote.[1] Even if such passage were secured, however, this does not say that the bill could receive the life-blood required in the way of appropriations of needed funds. The debate on the bill in the 79th Congress had involved some discussion of how much it would cost the government, but the proponents of the bill seemed very reluctant to admit that it would involve an appreciable expense. Thus, at one point, Senator Capehart kept pushing Senator Magnuson for some statement of the probable outlay. Thus:

> MR. CAPEHART: "How much does the Senator recommend we appropriate for this year?"
> MR. MAGNUSON: "There would not be any money appropriated this year."
> MR. CAPEHART: "What would the Senator say would be appropriated next year?"
> MR. MAGNUSON: "I imagine the first year it would be around $20,000,000. It would take up the slack of probably $100,000,000 that is now being duplicated in all the other agencies. Probably it would save $80,000,000 the first year." (Congr. Record, p. 8266).

No other definite statements were made as to how much the proposed program would cost, even though the original Bush report had made some definite proposals—about $33,500,000 for the first year, to rise to about $122,500,000 by the fifth year (V. Bush—Science: The Endless Frontier, p. 33).

In view of these recommendations, we can hardly say that the Senate faced, realistically, the question of what they were approving. The same matter will come up again. It will make little difference as to whether the next Congress adopts a national science foundation bill if it will not make a substantial appropriation to carry on the functions thus approved. Since the majority party of this Congress is doing some very loud talking about the way in which they

[1] It is to be remembered, of course, that 30 of the 96 Senators were not present and voting on this final vote. From this group of 30, 13 were Republicans and 17 were Democrats, from which there are three who have been replaced by Republicans in the next Congress. In this whole group of 30, certainly some of the Democrats were opposed to the enactment of S. 1850 and certainly some of the Republicans were in favor of it. All in all, it would seem that such a science-legislation bill should get a favorable vote in the Senate of the 80th Congress unless the absences at the time of the vote should happen to weight the scales against the bill.

are going to reduce expenditures and reduce taxes, there will be a strong tendency to leave science legislation as little more than a magnificent gesture. There is no use in speaking as Magnuson did. The new foundation may effect some economies. But it is preposterous to talk as though the investment of $20,000,000 in it could effect a saving of $80,000,000 in other existing agencies. The purpose of the bill is not to take over the research work already being done by other agencies. Its purpose is to add a governmental function not previously assumed by the federal government, and it will add an expense that is a clearcut addition to those assumed by the preceding Congress!

From the above analysis, it may be said that the record hardly suggests that the problem in this Congress will be simply one of avoiding tactical errors of introducing and supporting competing bills. The factors involved run much deeper than this. It is folly to assume that the final vote in the Senate indicated that a bill of the S. 1850 type would get the same decisions again. The situation must be understood in much more particular terms than that.

It is not impossible, of course, that the actual decisions in the next Congress will depend partly on communications from individual scientists, all over the country, to the Senators and Congressmen from their parts of the country. It may be worthwhile, therefore, to conclude this analysis with a table showing in detail "who voted in what way" on each of the major issues mentioned above, and showing also which members were absent from the Senate in this earlier case, since they probably will help decide the matter when it comes up for discussion again. Since the purpose of this table is to look toward the future, rather than just to record the past, each name has been starred where a new Senator has been elected in the place of the man thus designated, and the name of the new Senator is indicated in parentheses following the starred name. To facilitate the study of regional differences in the voting, the states are listed alphabetically under each of three main sections of the United States: (1) the "eastern and midwestern" states, (2) the "southern" states, and (3) the "Rocky-Mountain and Pacific-coast" states. Republican senators are listed in capital letters; Democrats are listed in italics, and in small letters. The other symbols used in the following table are to be interpreted in this way:

1850 = a vote against an amendment to alter S. 1850, or a vote for the bill as a whole on the final vote (last column to the right);

Bd = a vote for the board plan of control as contrasted with the single-administrator plan provided for in S. 1850;

LP = a vote for the amendment providing for loose patent control;

E = a vote to eliminate the Social Science Division;

Gr = a vote to limit fellowships or scholarships solely to graduate students;

N = a vote against S. 1850 as a whole;

(Bd), (1850), etc. = the vote a Senator indicated he would have cast if he had been present at the time of the vote.

TABLE 1

Analysis of Votes on S. 1850 and Proposed Amendments

Eastern and Midwestern

Connecticut	Bd	LP	E	Gr	1850
*HART, T. C. (BALDWIN, R.)	1850	1850	E	1850	1850
McMahon, B.					
Delaware	Bd	LP	E	Gr	N
BUCK, C. D.	1850	1850	1850	1850	1850
**Tunnell, J. M.* (WILLIAMS, Jn.)					
Illinois	Bd	LP	E	Gr	N
BROOKS, C. W.	1850		1850		1850
Lucas, S. W.					
Indiana	Bd	LP	E	Gr	N
CAPEHART, H. E.	Bd	LP	E	Gr	N
*WILLIS, R. E. (JENNER, Wm.)					
Iowa					
HICKENLOOPER, B. B.		LP	E		(N)
WILSON, G. A.					
Kansas	Bd	LP	E	Gr	N
CAPPER, A	Bd	LP	E	Gr	(N.V.)
REED, C. M.					
Maine					
BREWSTER, O.	Bd	LP	E	Gr	N
WHITE, W. H.					
Maryland		LP	1850	Gr	1850
**Radcliffe, G. L. (O'Conor, H.)*					
Tydings, M. E.					
Massachusetts					
SALTONSTALL, L.	Bd	LP	E	Gr	1850
**Walsh, D. I.* (LODGE, H. C.)					
Michigan	1850	LP	1850	1850	1850
FERGUSON, H.					
VANDENBURG, A. H.					
Minnesota	Bd	LP	E	Gr	N
BALL, J. H.					
*SHIPSTEAD, H. (THYE, E.)					
Missouri					
**Briggs, F. P.* (KEM, J.)	Bd	LP	E	Gr	1850
DONNELL, F. C					
Nebraska					
BUTLER, H.	Bd	LP	E	Gr	N
WHERRY, K. S.	Bd	(LP)	(E)	(Gr)	N
New Hampshire					
BRIDGES, S.					
TOBEY, C. W.	Bd	LP	E	Gr	N
New Jersey	Bd	LP	E	Gr	1850
HAWKES, A. W.					
SMITH, H. A.	1850	1850	1850	1850	1850
New York	1850	1850	(1850)	1850	1850
Wagner, R. F.					
**Mead, J. M.* (IVES, I. M.)	1850	1850	1850	1850	1850
North Dakota	1850	LP	E	1850	1850
LANGER, W.					
YOUNG, M. R.	1850	1850	E	1850	1850
Ohio	Bd	LP	E	Gr	N
**Huffman, J. W.* (BRICKER, J.)					
TAFT, R.					

TABLE 1—*Continued*

Eastern and Midwestern (Continued)					
Pennsylvania					
**Guffey, J. F.* (MARTIN, E.)	1850	1850	1850	1850	1850
Myers, F. J.	1850	1850	1850	1850	1850
Rhode Island					
**Gerry, P. G.* (*McGrath, J. H.*)	Bd	LP	E	Gr	(N)
Green, T. F.	(1850)	(1850)	(1850)	(1850)	
South Dakota					
BUSHFIELD, H. J.		LP	E		
GURNEY, C.	Bd	LP	E	Gr	N
Vermont					
AIKEN, G. D.	1850	1850	1850	1850	1850
*AUSTIN, G. D. (FLANDERS, R.)					
West Virginia					
Kilgore, H. M.	1850	1850	1850	1850	1850
REVERCOMB, C.	Bd	LP	E		
Wisconsin					
**LaFollette, R. M.* (McCARTHY, J. R.)	1850	1850	1850	1850	1850
WILEY, A.	Bd	LP	E	Gr	1850
Southern States					
Alabama					
Hill, L.	1850	1850	1850	1850	1850
**Swift, G. R.* (*Sparkman, J. J.*)	Bd	1850	E	1850	1850
Arkansas					
Fulbright, J. W.	1850	(1850)	(1850)	(1850)	(1850)
McClellan, J. L.	Bd	LP	E	1850	1850
Florida					
**Andrews, C. O.* (*Holland, S.*)		1850	E	1850	1850
Pepper, C.	1850	1850	1850	1850	1850
Georgia					
George, W. F.	Bd	1850	E	1850	1850
Russell, R. B.	Bd	1850	E	1850	1850
Kentucky					
Barkley, A. W.	1850	1850	1850	1850	1850
*STANFILL, W. A. (COOPER, J. S.)	Bd	LP	E	Gr	N
Louisiana					
Ellender, A. J.					
Overton, J. H.	1850	1850	E	Gr	1850
Mississippi					
Bilbo, T. G.					
Eastland, J. O.	Bd	1850	E	1850	(N)
North Carolina					
Bailey, J. W. (*Umstead, W. B.*)					
Hoey, C. R.	Bd	1850	E	1850	1850
Oklahoma					
MOORE, E. H.	Bd	LP	E	Gr	N
Thomas, Elmer					
South Carolina					
Johnston, O. D.	1850	1850	E	1850	1850
Maybank, B. R.	1850	1850	E	1850	1850
Tennessee					
McKellar, K.	1850	1850	E	1850	N
Stewart, T.	Bd				
Texas					
Connally, T.					
O'Daniel, W. L.	Bd	LP	E	Gr	N
Virginia					
**Burch, T. C.* (*Robertson, A. W.*)		1850	E	Gr	
Byrd, H. F.	Bd	LP	E	Gr	

TABLE 1—*Concluded*

Rocky-Mt. and Pacific Coast States					
Arizona					
Hayden, C.	1850	1850	1850	1850	1850
McFarland, E. W.					
California					
Downey, S.	1850	1850	1850	1850	1850
KNOWLAND, W. F.	Bd	1850	E	1850	1850
Colorado					
Johnson, E. C.	1850	1850	E	1850	1850
MILLIKIN, E. D.	Bd	LP	E	Gr	N
Idaho					
**Gossett, C. C. (DWORSHAK, H. C.)*	1850	1850	E	1850	1850
Taylor, G. H.	(1850)	1850	1850	1850	1850
Montana					
Murray, J. E.	1850	1850	1850	1850	1850
**Wheeler, B. K. (ECTON, Z. N.)*					
Nevada					
**Carville, E. P. (MALONE, G.)*	1850	1850	E	1850	1850
McCarran, P. A.	1850	1850	1850	1850	1850
New Mexico					
Chavez, D.	1850	1850	1850	1850	1850
Hatch, C. A.					
Oregon					
CORDON, G.	1850	1850	1850	1850	1850
MORSE, W. L.					
Utah					
**Murdock, A. (WATKINS, A. V.)*	1850	1850	1850	1850	1850
Thomas, Elbert D.	1850	1850	1850	1850	1850
Washington					
**Mitchell, H. B. (CAIN, H. P.)*	1850	1850	1850	1850	1850
Magnuson, W. G.	1850	1850	1850	1850	1850
Wyoming					
O'Mahoney, J. C.	Bd	LP	E	Gr	N
ROBERTSON, E. V.					

THE FOREIGN LANGUAGE REQUIREMENT FOR THE PH.D.

CHARLES BIRD, WILLIAM T. HERON, PAUL E. MEEHL, DONALD G. PATERSON

University of Minnesota

THE Graduate School at the University of Minnesota appointed a committee in 1945 to reconsider the present requirement that a candidate for the Ph.D. degree must pass special examinations in two foreign languages, usually German and French. Chairman R. M. Elliott appointed the authors of this article to act as a committee to prepare reports for the graduate faculty in psychology to be presented to the Graduate School Committee on the Foreign Language Requirement.

The present article presents two reports which have been submitted to the Graduate Committee. It has been submitted to the AMERICAN PSYCHOLOGIST in order to focus the attention of academic and professional psychologists upon foreign language requirements.

Members of the graduate faculty in Child Welfare and in Educational Psychology and Education have also prepared reports which are in harmony with the reports presented below.

REPORT OF DEPARTMENT COMMITTEE

The response to a brief questionnaire concerning the importance of the foreign language requirement for the Ph.D. degree in psychology circulated to members of the graduate faculty in psychology November 15–18, 1946 is summarized as follows:

1. Seven of nine graduate faculty members consider knowledge of foreign language to be of "little or no value" for scholarly work in psychology. None believed it to be of "great value."

2. Of 79 Ph.D. theses approved by the department since 1920, the present graduate faculty can recall only two in which explicit use of German or French was incorporated in the dissertation.

3. Pooled rankings assigned to knowledge areas outside of the field of psychology in answer to the following question, "From your present vantage points, how would you rank the knowledge of the following non-psychological subjects as to their professional value to a psychologist in your own field?" were as follows:

Statistics	1
Biological Sciences	2.5
Mathematics	2.5
Social Sciences	4
Philosophy	5
Education	6.5
Public Speaking	6.5
Foreign Language	8

The following resolution was adopted by the graduate faculty members of the department of psychology:

"Whereas the traditional requirement of mastery of two foreign languages for the Ph.D. degree with psychology as a major can be called into question for the following reasons:

1. In most of the fields and areas of knowledge in psychology at present there is no significant information published in foreign languages.[1]
2. Most students under the present system do not learn a useful mastery of the foreign languages.
3. The traditional requirement of French and German is archaic in view of present world conditions inasmuch as those two nations are not now producing scholarly contributions and the greater part of their major contributions have been and will be translated into English.
4. In the few instances where a graduate student needs to consult a foreign language publication, it would be more economical of the student's time and energy to have the material translated for him than to have to spend the effort to learn languages for which he will have very minor use.
5. In most cases there are other skills upon which time for mastery could be better

[1]The accuracy of this statement is attested to by the evidence presented by S. W. Fernberger, "On number of articles of psychological interest published in different languages," *Amer. J. Psychol.* in 1917, 1926, 1936, and 1946.

spent both from the standpoint of the individual and with reference to social welfare than it is now spent in the attempted mastery of foreign languages.

Now, therefore, be it resolved that it is the consensus of the graduate faculty members of the department of psychology that the Graduate School of the University of Minnesota should revoke the requirement of mastery of two foreign languages for the Ph.D. degree in psychology and that our department should be given the right to prescribe in place of this traditional requirement substitutions which are acceptable to the Executive Committee of the Graduate School and the Graduate Faculty and which the department genuinely believes will more adequately fit the Ph.D. candidate for his proper place in society."

A series of options might be adopted so that the requirements for the Ph.D. degree in psychology could be made sufficiently flexible to meet the needs of each candidate with the approval of the major adviser, the graduate committee of the department, and the Graduate Group Committee. The Ph.D. in psychology requirement would then be major, minor, dissertation, and two options from among the following:

1. Reading knowledge of German
2. Reading knowledge of French
3. Reading knowledge of Russian
4. Reading knowledge of Spanish
5. Statistics
6. Mathematics through calculus
7. A biological science, including medical subjects
8. A social science
9. Philosophy and logic of science
10. Courses in problems of higher education
11. Advanced courses in public speaking

None of the options from 5 through 8 could be chosen if it constitutes the student's minor.

Should the graduate faculty permit modifications of the foreign language requirement, the department would proceed to work out a more definite and specific definition of how options listed above could be satisfied.

COMMENT ON ABOVE REPORT

It is to be noted that the Department Committee merely requested autonomy in the setting of its Ph.D. requirements. Undoubtedly, for some students one or two foreign languages would be required. For others, especially those preparing for positions in applied psychology, probably no foreign language would be required.

The request for autonomy has not been acted upon and will not be acted upon until the Graduate School Committee completes and submits its report to the graduate faculty of the university. Whatever action is finally taken will, in all probability, not occur until sometime during the academic year 1947–48.

To supplement the report reflecting the views of the graduate faculty of the department and to guide the department in the setting of options it was decided to canvass the opinions of those who hold the Ph.D. degree in psychology from Minnesota. A total of 77 questionnaires were mailed; 68 were returned with 9 failing to respond, a percentage return of 89. The summary of the results are presented below without comment.

Opinions of Ph.D.'s in Psychology

I. Have you read professional psychological material in any foreign language since 1936?

	Number	*Per Cent*
Frequently	3	4
Several times	14	20
One or two occasions	27	40
Not at all	24	35
Total	68	99

II. How well can you at the present read psychological material in the following languages?

	German		*French*	
	Number	*Per Cent*	*Number*	*Per Cent*
Easily	5	7	15	22
With difficulty	11	16	20	29
With great difficulty	14	20	14	20
Not well enough to be of practical value	38	56	19	28
Total	68	99	68	99

III. You fulfilled the foreign language requirement. Of how much value do you consider that fact to be in your own post-Ph.D. work?

	Number	*Per Cent*
Great value	0	0
Considerable value	7	10
Little value	33	49
No value	28	41
Total	68	100

IV. From your present vantage point, how would you rank knowledge of the following non-psychological subjects as to their professional value to you if you would have had an opportunity to choose?
(Rank in order of merit)

	Rank Order	Mean Rank Order	S. D.
Statistics	1	1.68	1.07
Biological science (includ. med.)	2	2.81	1.62
Social science	3	4.19	1.47
Philosophy and logic of science	4	4.26	1.76
Mathematics (excl. statistics)	5	4.62	2.04
Public speaking	6	5.46	1.77
Education (prob. of higher educ., history of educ., or philosophy of educ.)	7	6.02	1.86
Foreign language	8	6.88	1.45

V. What do you believe should be done about the foreign language requirement for Ph.D.'s in psychology at Minnesota?

	Number	Per Cent
Continued as at present	4	6
Only one foreign language to be required	10	15
Abolished	11	16
Student to be permitted options	39	57
Not qualified to say	1	1
No answer	3	4
Total	68	99

COMMENTS OF RESPONDENTS

That the respondents felt keenly about the subject matter of the questionnaire is evident from the fact that an 89 per cent return was secured without using Toops'[2] four and five letter follow-up technique to insure a similar return. Additional evidence is available in the comments inserted on a goodly number of the questionnaires. The following quotations have been selected to indicate the variety of views expressed.

The following represent the small number in favor of the foreign language requirement: "I suspect that the language requirement may serve as a 'screening' function." "A knowledge of foreign languages is worthwhile as a part of the cultural requirement for a Ph.D. . . . I think that persons without knowledge of foreign languages are not well educated." "I suppose it is really very difficult to justify the inclusion of language requirements for all prospective Ph.D.'s in psychology. Nevertheless, I am definitely in favor of retaining this 'hurdle' as one of the requirements." "I believe the Ph.D. degree should reflect cultural as well as professional training; therefore, a graduate student should master one foreign language."

The following reflect varying degrees of opposition to the present requirements: "Tailor-make the requirements to meet the individual's needs, emphasize language if necessary for the person." "I favor retention of one language requiring more than superficial knowledge of the language." "I had four years of German in high school and three full-year college courses. The system whereby students learn only enough to pass an exam is probably wholly useless." "I think the language requirement should be abolished not because its objective is bad but because it does not achieve its objective." "The Graduate School ought not to lay down inflexible and universally applicable prerequisites." "Most of us have more than we can do to keep up with the literature in English in our interest areas." "The time spent on learning foreign languages might better have been spent for further orientation in more pertinent fields." "I should prefer to have spent those 100± hours (in learning the language) otherwise and hire translators now if ever necessary. That a psychologist should be made to learn French and not be required to understand a derivative or the logic of science, for two examples, is utterly absurd." "In my present work, I make little use of biological sciences, mathematics or language. I wish I knew a whole lot more about education, philosophy, social studies and was less rusty on statistics." "I would have benefited by spending the time devoted to foreign languages on study of educational administration, labor relations and personnel administration, and philosophy and logic of science." "If an article is good it is translated by a linguist with more accuracy than I can do it. I can pay a language major for translation and save time." "I feel that the language requirement was a meaningless hurdle greatly contributing to 'graduate student neurosis.'"

A concluding bit of information is in order. The Graduate Committee on the Foreign Language Requirement is proceeding in a most admirable fashion. It is being aided by the Committee on Institutional Research under the chairmanship of Dean T. R. McConnell. This Committee has directed Dr. Ruth E. Eckert to ascertain the views of all members of the graduate faculty, graduate students now on campus who have passed their foreign language requirement and all Ph.D.'s who have received their degrees from the University of Minnesota. These three inquiries will indicate the extent to which psychology, educational psychology, education, and child welfare represent a unique problem with respect to the question of foreign languages for the Ph.D.

[2]Toops, H. A. The returns from follow-up letters to questionnaires. *J. appl. Psychol.*, 1926, 10, 92-101.

PSYCHOLOGY AND PSYCHIATRY[1]

KARL A. MENNINGER, M.D.

Menninger Foundation and the Winter VA Hospital, Topeka, Kansas

THE Menninger Foundation-Kansas University School of Clinical Psychology springs into corporate being as the result of many forces—forces not born or generated over night. It is the experience of many men and women put together that has gone into the naisance of our School.

Not only experience, but a spirit of cooperation, a moving urge for mutual cooperation and for collaboration with others of similar interest—this too has gone into the parentage of this School. This cooperative spirit is reflected in its organizational structure. Never before in history have the Federal government, a State government, and a private institution combined to set up a teaching machine.

There is a saying current among us that psychiatry has arrived—or at least that it has emerged. If we are more conservative, we say it is emerging. I think we picture a lowly, obscure medical discipline practiced by a small number of, for the most part, undistinguished but devoted physicians rising to heights of considerable importance through sheer force of clinical necessity. We are not even quite sure ourselves why psychiatric patients should have suddenly seemed to become so numerous. So long as the selection of medical category was left to the public, so long patients could select an obstetrician, a surgeon, an eye doctor or a heart specialist according to their own conception of the nature of their illness, guided to be sure in part by medical prejudices. The only psychiatric patients were those whose friends and relatives forced this classification upon them with the aid of the sheriff and the judge. But when the differentiation became dependent upon cooperative groups of physicians representing these specialties, when the triage began to be made by medical scientists, the assignment to the psychiatrist suddenly loomed very much larger. Under a relationship with the public, such as that of the Veterans Administration, where every patient who needs help must be proffered it, one after another, just as they come, the great majority of cases do not turn out to be medical or orthopedic or dermatological or surgical. They turn out to be psychiatric.

And so, because large numbers of patients are now being handed over to psychiatrists, of which in turn there are but a very small number, psychiatry has become a magical word. It would almost seem as if all medical science might have to be reorganized and reconceived so that instead of being one of many smaller specialties clustering about medicine as a nucleus, psychiatry might become the center, with surgery, gynecology, opthalmology, urology, internal medicine itself ranged about it as adjuvants.

My impression is that precisely something like this is actually coming about. I have long thought it would, and said so often—and long ago. Do not ascribe this to any prophetic vision on my part. I think it is the logical conclusion from a deductive hypothesis which the course of human events and the evolution of medical thinking seem to have justified.

That hypothesis is not one for which I or any of us here would claim any credit, but it is one which older leaders in psychiatry and in psychology—a few of them—proclaimed early in this century, and which Plato and other wise men perceived and defined centuries ago. In an allied sense it has been the burden of the teaching not only of the philosophers but of every great religious teacher and leader.

I refer to the hypothesis which has many technical names—the "holistic theory of personality," the "psycho-biological principle," the "total personality concept" and many others. In religious terms it reads this way: "Man whose body you perceive, whose voice you hear and whose warmth you feel, is more than flesh and bones; he has a soul." The philosopher would say: "Of human beings there are material aspects and there are non-material aspects; man has a spirit." And now doctors, borrowing the cue from the psychologists, say the same thing in new words: "Psychology is a basic science necessary

[1]A condensed version of the address delivered at the inauguration of the Menninger Foundation-Kansas University School of Clinical Psychology, October 21, 1946. The address appeared in full in the *Bulletin of the Menninger Clinic*, March 1947.

to the understanding of human beings and their vicissitudes no less than the basic sciences of physics and chemistry upon which we have hitherto leaned exclusively."

It is fascinating to contemplate the possibility of identifying those factors in social evolution which suddenly bring medical scientists—some of them—back to a truth known better two thousand years ago than it is today. It is almost equally fascinating to review the history of culture and the history of medicine and to trace the divorce of what we call psychology from the science and practice of medicine and its transillient affiliation with mysticism, with philosophy and with religion. Perhaps it is medicine that has wandered rather than psychology.

The fact is that today here we are—a group of us—all with the same vision. Skeptics might say that we all have the same faith. At least we all speak the same language. We all have the same password; we are all concerned with the psyche.

Some of us say it in Greek, and some in Latin. We say it in German, in Hungarian, in Spanish, in French and in English. We say it—some of us—with clinical procedures in mind, some of us with research projects, some of us with educational programs. But we all say it, we all use it, we all center our thinking and our living about it. In such a union, whether one is a psychologist or a psychiatrist of a psychoanalyst or a psychometrician is of minor importance.

To this union of kindred minds the traditional practice of medicine brings a rich heritage. To the students of this first class, who have come here for training in clinical psychology, I have stressed the fact that the word clinical is one for which they should have profound reverence. It carries with it the highest ideals and best traditions of the medical profession. It implies the consideration given by one who is well to one who is sick—who lies abed.

The discipline of psychology on the other hand brings to medicine not only that essential *vitamin*, that too long lacking element, which it needs, that we have stressed above; but it brings to medicine also a tradition of objective measurement, of clearly defined logic, or properly methodological procedure which clinical practice and clinical thinking tend to make us forget and neglect. Traditional psychiatric nosology has finally been forced into open bankruptcy, largely by the penetrating symptomatological analyses made by the psychologists. And a very healthy state of affairs it is, I say. We can now begin to define, with a precision long absent from our work, the clinical factors—psychological and otherwise——which characterize similar syndromes. The diagnostic function of the clinical psychiatrist, in my opinion, would no more exclude the special techniques of the psychologist in his diagnostic studies than would a capable internist routinely exclude the findings of the roentgenologist. This has led to our irrevocable affiliation.

Whether, in the course of events, the therapeutic function of the psychologist will develop and find its proper place in the same way that the therapeutic function of the x-rays has found its place, we can only guess. I should expect it to do so.

Psychiatrists should not be surprised that psychologists are not yet fully accustomed to their new clinical role. Psychologists similarly should not be surprised if the medical profession, jealous of its historical and traditional responsibilities, is somewhat slow in welcoming the psychologists. In my own mind there is no doubt that the time will come when the assistance of the psychologists in the diagnosis let us say of cancer or arthritis would be taken as a matter of every day routine by the internist, and that the treatment of certain types of illnesses by the psychologist, associated with the psychiatrist, would be taken as standard procedure. Such a time is not here yet.

And so in all our work at this clinic and in this school, I think we should remember that we have a triple function: that of learning to do better what we are trying to do, that of teaching others what we do and setting up procedures worthy of more general trial, and finally that of seeking out more of the answers to the mysteries of the unknown.

It is to this triple purpose that our school of psychology, like our school of psychiatry, is dedicated. Similarly our other schools to be, schools for social workers, schools for nurses, schools for internists and surgeons will be likewise so dedicated. It is this conception of education and it is this conception of research and it is this conception of psychiatry which the Menninger Foundation was established to perpetuate.

VALIDATION OF THE GENERAL CLERICAL ABILITIES TEST FOR SELECTION AND PLACEMENT OF WAR DEPARTMENT CIVILIAN PERSONNEL

STAFF, PERSONNEL RESEARCH SECTION, PERSONNEL RESEARCH AND PROCEDURES BRANCH, ADJUTANT GENERAL'S OFFICE

IN THE Spring of 1943, a Civilian Personnel Research Subsection was established in the Personnel Research Section with the assigned objective of constructing, validating, and standardizing tests to be used for the selection and placement of civilian employees of the War Department. From its inception, the organization was hampered in its efforts to pursue the path of rigorous scientific methods by two unfortunate circumstances—both probably inevitable in such a large scale, decentralized operational enterprise. Yet each of these circumstances was, paradoxically, an integral part of the total selection and placement picture in the War Department from which the need for the new organization finally emerged. The first was the understandably urgent wartime need of the Army's operating personnel program for usable personnel selection devices with a minimum of delay. The second was the apparently unavoidable remoteness of certain policy-forming levels of authority from the practical problems of test construction and validation. Trained and competent *psychological* test technicians were, in the main, conspicuous by their absence at those policy-forming levels. What was represented there, instead, was a certain acquaintance with *educational* achievement testing, which tended to carry with it the assumption that "face validity" and generalized norms were all that were needed to establish the validity of an aptitude test in an industrial situation.[1]

Despite definite handicaps, a number of tests were produced and installed in civilian agencies of the War Department before the subsection was disbanded late in 1945. Very few of these, however, were ever validated or standardized in the best conventional manner. One exception was the General Clerical Abilities Test which was thoroughly explored in a number of carefully planned validation studies. The procedures and results of this work are outlined in the report which follows.

The General Clerical Abilities Test includes six sub-tests:

a. *Alphabetical Order* consists of 150 pairs of words, with the letters R and W between them. The examinee underlines one of these letters to indicate whether or not the words of each pair are in correct alphabetical order. The time limit is five minutes.

b. *Number Reversal* consists of 150 pairs of numbers, with R and W printed between each pair. The examinee underlines one of these letters to indicate whether or not the second number of each pair is an exact reversal of the first. The time limit is five minutes.

c. *Coding* is a 100-item 10-choice word-number substitution test. A key at the top of each page connects each word with a four-digit number. Each item consists of one of the key words, followed by all of the key numbers, and the examinee underlines the correct one. The time limit is five minutes.

d. *Number Speed* consists of 126 very simple problems in the addition, subtraction, multiplication, and division of whole numbers. The examinee writes each answer in a box. The time limit is five minutes.

e. *Word Meaning* consists of 80 pairs of words to be designated as synonyms, opposites, class-mem-

[1] This viewpoint is illustrated by the following excerpt quoted from the *Civilian Testing Handbook* published by the Office of the Quartermaster General for the guidance of lower echelon operating agencies. Under the heading of "Test Validity" this manual states:

"There have been many attempts to set up mathematical estimates of test validity by correlating the test with other types (sic) of criteria. Generally speaking, the validity of the test is best determined by using common sense in discovering that the test measures component abilities which exist in both the test situation and on the job. The common sense approach to the problem of validity can be strengthened greatly by basing the estimate of the component in the job on systematic observation or job analysis."

ber pairs, or none of these. The time limit is 10 minutes.

f. *Arithmetic* consists of 20 problems dealing with clerical and business matters. The examinee writes the answer to each problem in a box. The time limit is 30 minutes.

The first four sub-tests are essentially speed tests; their scores are added to provide a "Clerical Speed score." The Word Meaning and Arithmetic sub-tests are scored separately; in order to increase its contribution to the total test variance, the latter is given a weight of 2 in view of its smaller number of items and its greater reliability per item. The correctness of this procedure was indicated in subsequent studies involving more than 2000 cases, in which the multiple correlations with criteria were computed for separate scores and for various combinations. In these studies, the multiples based on all six sub-tests taken separately were only slightly higher than those based on the Clerical Speed Total (unweighted sum of the first four sub-tests), the Word Meaning score and the Arithmetic score.

Validity studies of General Clerical Abilities Test were carried out on more than 50 different groups of employees in offices and installations of the War Department. All of the data for these studies were collected by qualified psychologists attached to the Field Service Unit. Each of these field agents had the responsibility of selecting the samples on which he conducted the research (within the practical limitations of the work load of the particular Army installation and the availability of personnel). He administered or supervised the administration of the tests and collected the criterion data. Wherever it was feasible to do so, these data were collected *prior* to the administration of the tests. All tests were scored centrally at the Personnel Research Section's office in New York City. Thus the possibility of criterion contamination from local knowledge of the test scores was precluded.

In most cases two different criteria were used. In groups of mixed job-levels, Civil Service Grade, which is essentially a salary criterion, was employed as a criterion. Supervisors' ratings in one form or

TABLE 1

Validities of the General Clerical Abilities Test. Multiple Correlations and Beta Weights of Sub-tests with CAF Grade for Various Clerical Occupations

INSTALLATION	GROUP	N	R	BETA WEIGHTS		
				Cler. Sp.	Wd. Mean.	Arith.
I. Benicia Arsenal	Clerical Employees	75	.51	.177	.266	.135
	Warehouse Employees	98	.50	−.196	.069	.576
	Clerical & Warehouse (Combined)	181	.38	−.254	.049	.500
II. San Francisco Port of Embarkation	Payroll Clerks	41	.27	.295	−.184	.017
	Fiscal Clerks	34	.41	.266	−.326	.329
	Tallymen	39	.43	.443	−.021	.034
	Keypunch Operators	48	.51	.298	.317	−.012
	Personnel Interviewers	45	.34	.039	.195	.201
III. Fort Bragg	Payroll Clerks	87	.23	−.153	−.034	.280
	General Clerks	114	.16	.022	−.143	.220
IV. Census Bureau	Statistical Clerks	265	.58	.270	.128	.291
	Editorial Clerks	356	.32	.150	.052	.251
	Stat & Edit Clerks (Combined)	621	.43	.201	.055	.257
	Tab. Operators	87	.16	.142	.025	.006
	Procedure Clerks	84	.50	.168	.050	.336
V. Hqs 2d Sv Cmd	Clerks	165	.45	.182	−.124	.403

another were also obtained on all of the groups studied. This was done whether the employees were all in one grade or in several. Ratings were usually obtained under rather unfavorable conditions. Since it could never be assumed that any one supervisor in a given study would be able to rate more than 2 or 3 different people, ranking procedures were out of the question. On the other hand, there was an advantage in that all ratings were obtained personally by the field agents, who were competent psychologists. The field agent interviewed individually all the supervisors concerned in any one study. He was alerted to detect indications of halo effect, badly skewed distributions, and other pitfalls of rating, and to help the rater in avoiding or correcting such defects in his ratings insofar as possible.

Several different rating scales were employed. One of these contained only a single 9-step scale of *Overall Ability and Performance*; a revised version of this scale contained only 3 steps. Another scale, the *Test Research Rating Scale*, contained 17 different possible traits, e.g., quality, dependability, industry, etc., each to be rated by means of a graphic scale. The field agent after examination of the job descriptions, observation and consultation, selected the 4 or 5 traits most appropriate for that particular position. This scale was so designed as to require the rating of *all* ratees on *one* trait at a time.

TABLE 2

Validities of the General Clerical Abilities Test. Multiple Correlations and Beta Weights of Sub-tests with Supervisors Ratings for Various Clerical Occupations

INSTALLATION	GROUP	N	R	BETA WEIGHTS		
				Cler. Sp.	Wd. Mean.	Arith.
I. Benicia Arsenal	Clerical Employees	75	.46	.095	.204	.211
	Warehouse Employees	98	.33	.307	−.219	.205
	Clerical & Warehouse (Combined)	181	.30	.034	−.035	.298
II. San Francisco Port of Embarkation	Payroll Clerks	41	.60	.440	.000	.234
	Fiscal Clerks	34	.18	−.139	−.163	.134
	Tallymen	39	.49	.538	−.017	.144
	Keypunch Operators	48	.49	.115	.081	.362
	Personnel Interviewers	45	.28	.219	.041	.124
III. Fort Bragg	Payroll Clerks	87	.39	.197	.278	.070
	General Clerks	114	.19	.164	−.019	.064
IV. Census Bureau	Statistical Clerks	265	.29	.221	.076	.036
	Editorial Clerks	356	.36	.279	.037	.100
	Stat & Edit Clerks (Combined)	621	.33	.254	.058	.068
	Tab. Operators	87	.13	.130	−.049	.037
	Procedure Clerks	84	.22	−.189	−.232	.292
V. Hqs 2d Sv Cmd	Clerks	165	.28	.090	.082	.172
VI. Los Angeles Port of Embarkation	Correspondence Clerks	44	.25	.180	.163	−.041
	Personnel Interviewers	37	.16	.190	−.028	−.116
	Computing Clerks	36	.21	.199	−.067	.079
	Other Clerks	99	.33	.179	.096	.128
VII. NY Port of Embarkation	New Typists	97	.11	.034	.099	−.099
	New Clerks, medium work	74	.09	.091	.000	−.033
	New Clerks, routine work	84	.16	.156	−.009	.024
	New Computing Clerks	61	.56	.519	.236	−.185

The validities of the General Clerical Abilities Test computed against Civil Service position grade for a number of populations, are presented in Table 1, along with the beta weights for the three subscores of the test. Table 2 lists the validities for these same populations, plus others, where supervisors' ratings were used as the criterion. In each case, the populations selected for presentation are representative of the more than fifty groups to which the test was administered. In view of the small size of many of the samples, the stabilities of the corresponding values are questionable.

Inspection of Tables 1 and 2 reveals that the validities for the various groups tested range from .16 to .58 (median value .42) when the criterion is Civil Service grade and from .09 to .60 (median value .28) against supervisors' ratings. The correlations with Civil Service grades generally exceed those with supervisors' ratings. Part of this difference is doubtless accounted for by the inclusion of the last two installations in Table 2. For the various positions at these installations, Civil Service grade was invariable, i.e., all employees in a given job held the same CAF grade. In this circumstance it is obvious that there would have been some restriction in range of talent and a consequent lowering of the correlation coefficient. But even when these two installations are eliminated, the validities computed against ratings are still somewhat lower (median value .31) than those computed against Civil Service grade. This may indicate, on the one hand, that measurable abilities are more important than is usually claimed in determining promotion. On the other hand, it may indicate that the supervisors generally were unable completely to ignore job level in making ratings, and that this knowledge biased their ratings in an unpredictable fashion.

A comparison of the two sets of beta weights is of additional interest in this connection. For correlations against CAF grade (Table 1), it appears that the betas for the Arithmetic sub-test are generally highest. Moreover, arithmetic is weighted considerably higher, in general, where grade is the criterion used than it is for correlations against ratings (Table 2). For the last two installations, where grade was invariable for each group, the beta weights for Arithmetic are near zero or negative; but even when mixed-level groups are compared, this sub-test appears to be of considerably more importance where predictions of grade are involved. Again, it is evident that measurable differences in ability, particularly arithmetic ability in this case, are of some significance in determining grade placement or promotion.

Turning to the correlations against ratings (Table 2), there appears to be some evidence that Clerical Speed is the most important of the variables involved in the test. This is particularly true for the fixed-level groups, most of which are also fairly low-level jobs.

The point that stands out most clearly from the results presented in Tables 1 and 2 is the marked variability in the validity of the test, both from one installation to another, and from one clerical occupation to another at the same installation. The differences between installations probably reflect variations in selection and placement procedures, promotion policies, etc. As for specific clerical occupations, it appears that the test is more valid for computing clerks (including payroll clerks and statistical clerks) than for jobs involving more routine clerical activities. The wide range of the validity coefficients is further evidence that a given battery of tests may have high validity for one occupation and low validity for another which appears to be quite similar (e.g. payroll clerks at Fort Bragg and at San Francisco Port of Embarkation, Table 2). Moreover, even where the validities for apparently similar occupations are fairly close, the regression weights for the two occupations may be quite different (e.g., clerks at Benicia Arsenal and at Headquarters, 2nd Service Command, Table 1).

In accounting for this variability in validity coefficients and regression weights, the possible effect of sampling error cannot be ruled out, in view of the small number of cases in each population. Nor can the possibility of various types of experimental error be entirely eliminated. However, it appears that test validity in industrial personnel work cannot safely be assumed on the basis of apparent similarity of job titles or position descriptions.

SOME AREAS OF CAUTION FOR THE PSYCHOLOGY STUDENT

THEODORE LANDSMAN AND MANFRED FRANK DE MARTINO

Syracuse University

CURRENTLY in the field of psychology there has been seen an unprecedented growth in the undergraduate and graduate student bodies of our American universities. The more optimistic social scientists can view this influx as a healthy reaction of society to a strongly felt need. It presents a picture of society organizing to maintain itself against the growing threat of mental disease. Nevertheless, the need at the moment is so great as to far overtax the facilities of available applied psychologists. It is neither unusual nor unexpected to discover those who feel this need consulting not only the charlatan, see Steiner (3), but also the self-admitted semi-qualified. Nor is it unusual to find the professionally unqualified eager to render this immature service, operating under the delusion that some help is better than none.

It is a strong and mature student who can resist this urge to advise and counter with a sympathetic referral to a qualified psychologist. For this reason, a word of caution should accompany each of those student-psychologists who will spend up to seven years in preparation for qualified entrance into the field.

SPECIFIC AREAS FOR CAUTION

A student's acquaintance with the many tools and techniques of the psychologist brings with it the usually well-motivated if dangerous desire to wield the scalpel or test the new toy. Too few are aware that the tools of psychology in the unpracticed hand can do as great damage to the organism as the unskillfully applied surgical instrument. There are a number of areas in the field of applied psychology which have undue fascination for the student. These are the areas in which the greatest harm can be accomplished; these are the areas in which are hidden the pitfalls for the student and these are the areas wherein the integrity of the field will meet its test. Attention of the student should be directed to both the values of and dangers in the use of hypnosis, catharsis, diagnosis, advice, vocational guidance, test interpretation, and psychotherapy.

Hypnosis. The use of caution should be emphasized particularly in connection with the practice of hypnosis. This phenomenon seems to attract the interest of a wide variety of individuals. One of the disturbing things about hypnosis is that only comparatively few individuals really understand its workings.

Research (5) has demonstrated that if an individual consents and submits to being hypnotized and is a good (highly hypnotizable) subject, he cannot resist being put into a hypnotic state. After having been hypnotized a few times a good subject can be put into a deep hypnosis almost instantly. Once such a subject has been developed, besides being highly susceptible to hypnosis by the particular hypnotist and almost completely under his control while in hypnosis, he is also very easily hypnotized by other hypnotists. The only way the subject can be protected is by means of some special procedure.

Just as recall of past events is possible under hypnosis, so are delusions, hallucinations, amnesia, analgesia, and certain forms of paralysis. In light of these facts it is apparent that a semi-scientific hypnotist could unknowingly do a great deal of harm to a good subject. Hypnosis is to be practiced judiciously, and only by those who fully understand its workings and serious ramifications.

Catharsis. While there are many professionally trained who might condone the use of mental catharsis, by students, actually it contains a serious pitfall. To allow his classmate to pour out his griefs and pent-up feelings seems to be the least one can expect of a friend, psychology major or not. The pitfall is unmasked, however, at the close of the cathartic outpouring when the troubled friend concludes with this plea: "That's it. You are a psychology major, what should I do now." Responsibility for carrying out a therapeutic program is inevitably placed in the lap of the sympathetic friend who was under the impression that he was merely to be a listener. His class-

mate will not look to the psychology student as a mere sympathetic listener, but will request, almost demand, specific recommendations, therapeutic measures. As a corollary it must be recognized that in this seemingly innocent and useful service, mental catharsis, the psychology student, because of his field of interest, is obliged to do even less than that expected of a classmate. However, it is not to be expected that he should summarily reject nor ignore a friend in need; rather, his obligation both to his friends and his profession is to know the available psychological services and to refer those in need to the appropriate service.

Diagnosis and Giving Advice. Psychology students seem to find it difficult to resist diagnosing and labeling individuals with such terms as insecurity, inferiority, neurosis, phobia, and compulsive obsessive. Even assuming that the diagnosis is correct, it should be realized that the chances of harm being done to the individual far outweigh any possible benefits which might be derived from the diagnosis. Simply to tell an individual that he has inferiority feelings results in driving him further into his feelings of inferiority. To inform an individual that he is a compulsive obsessive in most instances tends to make him feel more ridiculous and neurotic. Diagnosis alone is of comparatively little value. What is greatly needed and desired is effective psychotherapy. The person with an emotional disturbance does not want to be "labeled," he wants to be helped.

The giving of advice seems to be a practice of which most individuals feel quite capable. This is especially true in the cases of certain student psychologists. Some feel capable of handing out advice regardless of the seriousness or kind of problem. Quite often, unfortunately, a well meaning student gives out advice which has a deleterious effect on the recipient's personality. The giving of advice is dangerous for several reasons. For one thing the student analyst may not fully understand the dynamics of the situation and hence give the wrong advice. Also, the client may misinterpret the advice given and in his attempt to carry it out become more involved and confused. Finally, it should be pointed out that organic factors which probably the novice is totally unaware of could really be at the bottom of the disturbance. The student psychologist should remember that when he gives advice he is accepting a responsibility. In the event something goes wrong the recipient can come back with the statement, "You told me to do that." A good rule for the student of psychology to follow is: *Never give advice.*

Test Interpretation and Vocational Guidance. The frequent complaint of thousands of college students who go through admission test batteries, that they seldom are informed of the results, is justified. Yet few of them are aware of the problems involved in a formal report of scores and standings to the student. While no information on the scores is of little value, some information (such as scores and norms alone) can be detrimental to adjustment possibilities and educational-vocational choices. Before interpreting a test score, the student can first ask himself these two questions: Do I know the standard deviation, reliability, validity, and other relevant statistics pertinent to this test? Secondly, can I explain these concepts to the testee? After these are satisfactorily answered, the student-interpreter can question whether or not the test is meaningful except in association with measures of the other components of social or vocational adequacy.

Tests represent only one of the many tools and techniques of the vocational guidance counselor. In addition there are the interviews, projective devices, job and interest histories, subjective estimates of intelligence, personality, aptitudes, interests and achievements. To give either educational or vocational guidance, the counselor must be skilled not only in one or two of these tools, nor can he be merely familiar with them, but he must possess skill in the use of each. He must use judgment in the selection of the tools pertinent to the particular vocational or educational problem. Faulty guidance distorts the individual's own concept of his abilities and jeopardizes the possibilities for educational training and vocational success.

Non-Directive Psychotherapy. Recently a great deal of attention has been focused on the various counseling techniques and other forms of psychotherapy, particularly non-directive methods. Non-directive techniques have been evaluated, praised, and criticized. The authors feel that while such criticisms are healthy, and should be encouraged, statements appear in them which often lead to unintended results. For instance, several criticisms of non-directive techniques have been made implying that these techniques are simple and easy and that

almost anyone is capable of applying them successfully. Thorne (4) states, "Non-directive methods are relatively simple to master, require little clinical experience with which to obtain results and involve relatively small dangers of worsening the patient's condition by inept bungling." The meaning of such a statement can be very easily misinterpreted, by the interested but uninformed beginning psychology student, to mean that practically anyone is capable of carrying on non-directive counseling effectively.

Such an interpretation would not only be incorrect but dangerous. Bungled therapy can be as destructive to one's total personality as unskilled surgery. For most individuals a great deal of courage is necessary to consider going to a psychological counselor. This is due to the unfortunate stigma still attached to emotional problems. Even after making the decision, most clients approach the counseling situation reluctantly, with a highly skeptical and somewhat fearful attitude. Hence if a counselor does an incompetent job of counseling, the client may become dismayed, and antagonistic towards all psychotherapeutic techniques. In disguised pre-psychotic cases and in instances of severe neurosis, poor counseling may serve only to drive the individual further into his disorder, especially if he feels threatened. Unskilled responses on the part of the counselor result in confusion rather than clarification of feeling, and consequently hinder rather than aid therapy.

The non-directive counselor's task is not simply to sit back and nod his head at various intervals. He must skillfully create a warm permissive atmosphere, accept both positive and negative feelings without moral judgment, clarify ambivalences and help the client get insight into his disturbances (1).

Psychotherapy is not merely a technique, it is an art. A. H. Maslow, and B. Mittelman (2) state "Quack cures are at best often harmful and they delay proper treatment." It should be realized that attempts at counseling and psychotherapy by the untrained and unskilled like the factors previously mentioned can lead to a great disservice to both the client and the profession.

SUMMARY

Taking the individual as our frame of reference, there are a number of specific and general principles to which the student can look for guidance during his years of study toward preparation for one of the most challenging fields of science today.

Specific Cautions:

1. Don't label individuals with psychological terms.
2. Don't diagnose.
3. Don't give advice.
4. Don't attempt hypnosis.
5. Don't generalize freely.
6. Don't attempt treatment of individuals.

General Principles

A. The responsibility and course of action of a psychology student with regard to classmates who approach him for psychological aid is different from that involved in a friend-to-friend relationship. His responsibility is greater in that his classmate anticipates (although erroneously) expert and proven treatment from his psychology student-friend while he anticipates only sympathetic response from a student-friend.

B. The great majority of responses which the semi-trained can give to those in need of psychological help, while they may temporarily reduce tension, will likely interfere with the normal drive toward a healthy adjustment by either reduction of the drive or misdirection of the drive.

C. When entering into the study of psychology, the student should realize that he will be approached for help during his training. He assumes the responsibility of being aware of available resources for psychological services (such as student counselors, mental hygiene services, educational and vocational guidance counselors) and the responsibility of suggesting the proper resource to those who ask for aid.

D. Early in the introductory courses in psychology, this information (the resources) should be made available to students. Therefore, psychology departments, their instructors and professors share this responsibility.

REFERENCES

1. COMBS, A. W., Basic aspects of non-directive therapy, *Amer. J. Orthopsychiat.*, 1946, **16**, 589–604.
2. MASLOW, A. H. AND MITTLEMAN, B., *Principles of abnormal psychology*, New York, Harper Bros., 1941
3. STEINER, LEE R., *Where do people take their troubles?*, Boston, Houghton Mifflin, 1945.
4. THORNE, F. C., A critique of non-directive methods of psychotherapy, *J. abnorm. soc. Psychol.*, 1944, **39**, 459–470.
5. WELLS, W. R., Ability to resist artificially induced dissociation, *J. abnorm. soc. Psychol.*, 1940, **35**, 261–272.

Comment

PRACTICE IN PERSONNEL PSYCHOLOGY

The University of Illinois has rendered great service to the industries of the state, both through its vast research programs and through the Extension Division. This latter branch of the university has made available many valuable courses of instruction in numerous technical fields. Wherever there is a reasonable demand, the university has been carried to the industrial workers. Also assistance in the development and improvement of employee-relations programs has been extended to industry. However, until quite recently little effort has been devoted to the study and improvement of the working conditions for the hundreds of nonacademic employees hired by the University.

During the past year, special arrangements have been made by the local Office of Nonacademic Personnel and the Department of Psychology whereby graduate students engage in research on problems which exist in the relations between the nonacademic employees and the university. The benefits of this program are two-fold: the students earn credit in industrial psychology while learning about practical situations instead of being restricted to theoretical textbook problems; and the employees profit by the research devoted to improving employment conditions.

One of the research projects now in progress is a systematic evaluation of the three hundred classifications of nonacademic positions. Each position is analyzed in an attempt to assign proper relative values to each of the factors which determine the location of that position in the salary structure.

A chart is then made by plotting the point value for each position against its present salary. A line of best fit is then drawn on the chart. Positions which fall more than one standard deviation from the line of best fit are carefully scrutinized, and an attempt is made to rectify the salary. When the present salary is found to be above the line of best fit, the salary of the person now holding that position is not reduced. However, replacements are made in line with the general salary structure.

In addition to determining the salary range for each position, an effort is made to determine the proper place within the range for each individual on a merit basis. Every employee is rated once a year. This merit rating is considered as one factor in determining the salary of that individual. Methods of increasing the validity and reliability of these ratings are being studied.

The scientific construction of examinations to be used in the selection of employees for filling vacancies in each of the three hundred classifications is another research project under way. Performance tests as well as several of the standard paper-and-pencil examinations are used for this purpose. Tests are validated by administering them to experienced employees known to be capable of meeting the requirements for their classifications.

A project in attitude measurement has been completed. A survey was conducted by distributing questionnaires to all employees, who were instructed that the signing of names was optional. The scale measured employee attitudes toward such factors as opportunity for advancement, fairness of examination system, proper retirement age, fairness of salary as compared to that which is paid other people doing similar work, the extent to which supervisors are capable of answering questions concerning university policies, training programs, and recreation programs. Results of this poll were published in the employee newspaper, *The Illini Worker*. In most instances, employee attitudes were surprisingly favorable. Many well-founded comments and suggestions were written on the questionnaires. This gave a splendid opportunity for employees to "air" small grievances that had perburbed them, in some instances for many years.

While the program is relatively new, the results seem to justify its continuation. The training provided for the students by these projects appears to be very valuable in preparing them for future work in the field of personnel.

GERALD CARTER
University of Illinois

A NEW TYPE OF ELEMENTARY COURSE

Rightly or wrongly the uninitiated elementary student expects psychology to supply him with aids in meeting people, inspiring their cooperation and in solving everyday problems of human relations. As

academic psychologists promoting the *science* of human behavior we may quickly and rudely disabuse students of that notion. Certainly the conventional outline emphasizing methodology, the facts of sensation, conditioning, memory, motives, emotions and so on should convince even the most obtuse student that elementary psychology does not directly teach one how to live congenially with other people. *Psychology now is more interested in applying scientific methodology to human behavior than in solving the problems of human behavior.*

Of course, somehow or other we *hope* that a course in elementary psychology will assist students in making a better adjustment to the world about them. Indeed, this hope is fulfilled in some instances. But an examination of any of the conventional elementary textbooks makes one wonder what a student could possibly learn that would be of benefit to him in getting along with his work associates, his fraternity brothers, his wife, or the family he may some day rear.

The current and recent eruptions in labor-management relations, the increasing divorce rate, mounting juvenile delinquency, race riots, and international tensions unrelieved by a devastating war—all these point to the pressing and immediate need for social skills leading to harmonious, cooperative relations between men. As instructors of elementary psychology, we can wrap ourselves in our scientific cloaks and remain unruffled by the world in which we live. Or we can apply what limited and imperfect knowledge we now possess to assist students to understand the human basis of cooperation and conflict.

Not only is the conventional elementary course teaching a content that is out of touch with life but it tends to encourage a way of thinking that is fruitless and of doubtful value in dealing with the day-to-day adjustments of the average person. We teach students the importance of laboratory control over all variables. We show how a single stimulus variable may be isolated from its context by holding all others constant and then observing a small segment of behavior. We focus attention on the importance of repeated observations under highly controlled laboratory conditions. The whole effort is to simplify the causative factors to establish their influence on behavior. This constant effort to force students to look at single factors in isolation is a positive hindrance in comprehending problems of human interaction which are exceedingly complex. In other words, we teach students to simplify their observations, to isolate factors, to look for one-to-one correlations, when the desperate need in the social clinical field is for broad perspective, vision that can encompass not only a wide variety of factors but a vision which will see the interrelations of impinging conditions as well as their multiple chain reactions. Notwithstanding the emphasis of the Gestalters on the importance of context and ground in the perceptual and learning fields, we have yet to alter our instruction to give practice in what Elton Mayo calls syncretistic thinking, that is, taking simultaneous account of all possible stimulus conditions and their mutual interdependence.

I am not deploring scientific methodology, nor am I suggesting that psychological laboratories should be closed. These have their place and are essential. But the conventional elementary course does not meet the needs nor the expectations of the vast number of students who intend to take only one or two courses in the department. The scientific tradition of psychology should be perpetuated but the elementary course need not be loaded with this burden.

The course[1] which I have in mind aims primarily to develop an attitude and a way of thinking rather than a technical vocabulary, a long list of established facts, or a handful of doubtful abstractions called "laws" of behavior. The material of the course is a series of experiences or problems which individuals actually faced. These cases are not to be confused with a case history or report as written by a social service investigator. They are true narratives reporting events and conditions surrounding a situation that called for some judgment and decision for action.

Consider the story of Ken whose roommate was pledged to the fraternity that blackballed Ken, even though he was a "legacy." Ken's background, his family, experiences in prep school, his expectations in coming to college, his attitude toward this rebuff, the college, the roommate's attitude and background are described and presented to the class for discussion. If you were the roommate what would you do? What must be considered in deciding on a line of action in this case?

[1] I am indebted for much I have to say here to a group at Harvard with whom I was briefly associated; the former Dean of the Graduate School of Business, Dr. Wallace B. Donham, Professors Elton Mayo, Fritz Roethlisberger and others.

Or consider that foreman who walked into the shop at the moment a new workman named Joe sent the union steward sprawling across the floor. The foreman discovered that Joe was not only non-union but was a "rate-buster," eager to assemble crank cases in the shortest possible time, taking advantage of ingenious shortcuts. In brief, Joe was a valuable workman for management but a disrupting influence on the morale of the shop. How would you handle Joe, or the union if you were the foreman? What else would you like to know that is not contained in the write-up of the case?

Each case as presented to the class may run six to ten single spaced pages. Inferences concerning the significance of events are scrupulously avoided since one of the objectives of the course is to give the students practice in making such inferences.

Class discussion proceeds with as little direction from the instructor as possible. He avoids expressing his own opinions. If discussion lags, he may summarize what has been said, much as an interviewer reflects and restates a client's feelings in non-directive counseling. Effort is constantly directed toward placing the responsibility upon the students to analyze, diagnose, and reach an understanding of the multiple facets of a situation before deciding upon a line of action. The class session is not a time for quizzing students on the contents of a text nor is it a time for the instructor to perform as a doubtful fountainhead of wisdom. The educative process is, in a real sense, self-education.

Supplementing the class discussion of cases are a series of reading assignments, dealing with semantics, informal and formalized social codes, the nature of authority, the influence of emotion on thinking, the subtle expression of prejudice and bias. Students are introduced to non-directive counseling and intelligent listening as two skills which can be useful in a wide variety of situations.

This type of course has been given a trial at Harvard, Ohio University, Kansas University, and at Colgate. At Colgate the course receives an enthusiastic endorsement by the students. Some report it as the best course they have taken. It has given them an entirely new understanding of human interaction. Some want an advanced course along the same lines. I believe the students develop a maturity of judgment because of vicariously living through the cases of the course. On the other side, some complain that theory is not sufficiently stressed; that we never really came to any clear conclusions or set up rules which can be applied to settle all problems. This latter charge is true. In this field of human relations, there are now no universal rules.

A course such as I have described may not be psychology, but it is needed somewhere in the educative process. It is frankly a kind of elephant bird —some sociology, economics, semantics, anthropology, psychology, plain common sense. However, in a day when conventional departmental lines look suspiciously outmoded, we as psychologists had better recognize our responsibilities and lay a small token payment on the line now, against the huge social debt our technological civilization has thrust upon us.

Dr. John Jenkins at the beginning of the war remarked that the airplane had developed beyond man's ability to control it. The same is true of the rest of our technical and mechanical achievements. We have the gadgets to live richly. We lack the psycho-social skills to live harmoniously. This course is an attempt to develop those skills.

F. K. BERRIEN
Colgate University

Across the Secretary's Desk

NATIONAL SCIENCE FOUNDATION

Last year many psychologists were keenly interested in the debates over the wisdom of establishing a National Science Foundation and the relative merits of the type of foundation proposed in the rival Kilgore and Magnuson bills. When those bills were combined into the compromise Senate Bill 1850, most psychologists hoped that the bill would be passed and a foundation created. That did not happen. S. 1850 passed the Senate, but with provision for the social sciences deleted. There the matter died as far as the 79th Congress was concerned.

New bills have now been introduced into the 80th Congress. S. 1850 as it passed the Senate last year was reintroduced this year by Senator Elbert Thomas of Utah. It is now known as S. 525. Senator Alexander Smith of New Jersey introduced S. 526, similar to the Magnuson bill of last year. Parallel bills have been introduced into the House of Representatives.

House bills were referred to the Committee on Interstate and Foreign Commerce which held public hearings on March 6 and 7. The Senate bills were referred to the Committee on Labor and Public Welfare. That committee decided that no public hearings would be held this year in view of the extensive testimony on the bills last year.

The principal differences between the two Senate bills (and, likewise, the House bills) center around (1) the type of administrative structure, (2) regulations governing the disposition of patents, and (3) the treatment of the social sciences. The differences between the two bills are described in tabular summary in *Science* (March 7, pp. 253–254). The text of the Smith bill has also been printed in *Science* (February 21, pp. 191–195) as has part of the testimony given in the House committee hearings (March 21).

Last year the scientists of the country were divided among themselves on a number of differences between the Kilgore and Magnuson bills. This year many scientists have felt that they should resolve any differences of opinion that exist and agree upon supporting the type of foundation which their majority considers most desirable. The AAAS took the lead by calling upon other scientific groups to join with them in organizing an Inter-Society Committee for a National Science Foundation. Approximately eighty scientific organizations appointed representatives to the first meeting on February 23. E. Lowell Kelly and I represented the APA.

An Executive Committee, elected at the February 23 meeting, has since polled the entire committee on the debatable issues.

Members of the Inter-Society Committee were asked which type of administration they preferred. Sixty-three per cent voted for a single Administrator, appointed by the President, who would work with the advice of a National Science Board.

Ninety-eight per cent of the Committee believe that the Foundation should include the social sciences as well as the natural sciences. The members were evenly divided between believing that the social sciences should be specifically included in the legislation and believing that the Foundation should be permitted to include work in the social sciences if it found that desirable.

Eighty-six per cent believe that the Foundation should grant undergraduate scholarships as well as graduate fellowships to science students.

Ninety-four per cent agreed that the Inter-Society Committee should take no stand on patent legislation.

These figures which have been given to the appropriate House and Senate committees constitute the best available expression of the pooled judgment of the scientists of the country toward the differences which exist in the present Science Foundation bills.

Because further news concerning these bills is likely to come in the immediate future, I suggest that psychologists keep themselves informed on the topic by reading the weekly accounts of any news pertaining to the bills in *Science*.

An effort will probably be made to combine the present bills into a single compromise bill. When debate begins in the House and Senate, amendments will probably be proposed. Congress' decision will depend to a considerable extent upon how actively and how quickly scientists inform their Senators and Representatives of their wishes.—DAEL WOLFLE

Psychological Notes and News

ANDREW W. BROWN, professor of psychology at the University of Chicago, died December 19, 1946, at the age of 56 years.

BERT A. NASH, professor of educational psychology at the University of Kansas, died February 18, 1947, at the age of 49 years.

HENRY BEAUMONT died February 21, 1947, at the age of 45 years. He was associate professor of psychology and director of the Industrial Psychology Bureau at the University of Kentucky.

ARTHUR KORNHAUSER, formerly professor of business psychology at the University of Chicago, has been appointed visiting lecturer in sociology at Columbia University and is doing consulting work in industrial psychology and opinion research.

CARL W. BOYER, who served as Personnel Consultant Officer and Classification Officer in the AGO, has returned to Muhlenberg College, Allentown, Pennsylvania, where he has been appointed director of the newly established Personnel Consultation and Test Bureau.

ARTHUR LICHTENSTEIN has been appointed assistant professor of medical psychology at the Johns Hopkins University.

DOUGLAS J. WILSON has resigned from the staff of the University of Western Ontario to become editor in education and psychology of the Montreal Daily Star.

D. J. ROBERTS has been appointed to the Texas regional organization of Rohrer, Hibler, and Replogle.

DONALD W. MACKINNON, professor of psychology at Bryn Mawr College, has accepted an appointment as professor at the University of California, Berkeley, beginning in the academic year 1947–1948.

GRACE H. KENT has been appointed visiting professor of psychology at the University of Miami. She was at Danvers State Hospital, Massachusetts.

DR. JOSEPHINE ROHRS HILGARD, director of the child guidance clinic at Children's Hospital, San Francisco, has been appointed associate clinical professor of medicine at Stanford University.

GEORGE K. BENNETT, formerly vice-president of the Psychological Corporation, was elected president at the February meeting. He succeeds PAUL S. ACHILLES, who has served as managing director from 1931 to 1944 and as president since that date.

HOWARD GRAY MARTIN has been appointed director of the Vocational Guidance Center recently established by Psychological Consultants, at 530 Powell Street, San Francisco, California.

AUSTIN DESLAURIERS is now clinical psychologist in the Bureau of Mental Hygiene, Office of the Health Department, Washington, D. C.

ORRIN H. CROSS has joined the staff of the psychology department of the University of Alabama as acting assistant professor.

CHARLES WILLIAM HUNTLEY, formerly Dean of Adelbert College, has succeeded CHARLES F. GARIS as Dean of Union College, Schenectady, New York.

ROSE GREENSTONE is now at the Lehigh Guidance Clinic.

ESTHER STUBBS VIK has been appointed psychologist at the Delaware State Hospital and Mental Hygiene Clinic.

ANTHONY C. WESTERHOF is now associate professor of psychology at Drake University, Des Moines, Iowa.

EVELYN POTECHIN (Mrs. Robert Perloff) has joined the developmental division of the research department of the Curtis Publishing Company as research associate.

MARY J. KIENTZLE has been appointed assistant professor of psychology and JOE H. MCPHERSON

has been appointed instructor in psychology at the State College of Washington, Pullman.

LEOPOLD BELLAK has been appointed associate in psychiatry and assistant psychiatrist at New York Medical College.

At Brown University, HAROLD SCHLOSBERG has been promoted to the rank of professor of psychology and GREGORY KIMBLE to assistant professor. JOHN K. BARE and RICHARD L. SOLOMON have been appointed to the staff as instructors.

JOHN W. CHOTLOS has joined the Psychological Service staff of the Winter VA Hospital, Topeka, Kansas.

SOLOMON MACHOVER, formerly at Kings County Hospital, has been appointed Branch Chief Clinical Psychologist at branch office #2, New York, and CARL L. ANDERSON has been appointed Assistant Branch Chief Clinical Psychologist at the VA Hospital in Memphis.

F. C. BARTLETT of the University of Cambridge lectured on March 10 at the George Washington University on the topic "War Services of British Psychologists." On March 12 he lectured at the University of Maryland on "Social Psychology." He also gave several seminars to various groups of psychologists in the vicinity. He will visit the Aero-Medical Laboratory and the School of Aviation Medicine before his return to England in April.

The APA Committee on Psychological Service Centers has been enlarged so that it now includes the following representatives of relevant APA Divisions: JERRY W. CARTER, JR., Division of Clinical and Abnormal Psychology; ROBERT A. YOUNG, Division of Consulting Psychology; VERNON P. SCHEIDT, Division of Industrial and Business Psychology; BERTHA M. LUCKEY, Division of School Psychologists; C. GILBERT WRENN, Division of Counseling and Guidance Psychologists; and WM. CLARK TROW, Division of Educational Psychology.

MILTON H. ERICKSON, director of psychiatric research and training at Wayne County General Hospital and Infirmary and associate professor of psychiatry at the Wayne University College of Medicine, conducted a three weeks post-graduate course in psychiatry at the Warren State Hospital, Pennsylvania, for the members of the staff there and for various hospital staff members sent to Warren from other Pennsylvania state hospitals.

The National Council of Women Psychologists has voted to change its title to the International Council of Women Psychologists. The officers are: GERTRUDE HILDRETH, president; HARRIETT FJELD, vice-president; MILDRED MITCHELL, secretary; and RUTH PATTERSON, treasurer.

The University of Louisville has established a psychological services center. NOBLE H. KELLEY is director and GEORGE A. MUENCH is consulting psychologist.

The New York State Association for Applied Psychology has elected the following officers: WALLACE WULFECK, president; ARTHUR WRIGHT COMBS, vice-president; GLADYS TALLMAN, secretary; and GEORGE K. BENNETT, treasurer.

The division of psychology of Western Reserve University is sponsoring a series of lectures and seminars in dynamic psychology from February 21 to May 23. The speakers, in the order in which they will lecture, are: O. HOBART MOWRER, THOMAS M. FRENCH, EDWARD C. TOLMAN, DAVID M. LEVY, GARDNER MURPHY, ROGER BARKER, and FRANZ ALEXANDER. It is planned to have these lectures published.

Indiana State Teachers College, Terre Haute, Indiana, has opened a new Division of Special Education with BERNADINE SCHMIDT as director. This expansion of services came just prior to the revision of the Special Classes Law of the State of Indiana, which provides financially for special classes and for medical, dental, and psychological services for handicapped children.

THADDEUS L. BOLTON, professor emeritus and former chairman of the department of psychology at Temple University, has established a trust fund of $61,000. A portion of the income of the grant will be used for research projects by students and staff,

and the rest will be used for establishing, in part, the Thaddeus L. Bolton Professorship in Psychology.

George S. Stevenson, Medical Director of the National Committee for Mental Hygiene, has announced that the 1947 Lasker Award of $1000 for outstanding service in mental hygiene will be presented for this year's most significant contribution to popular adult education, especially in parent-child relationships. Presentation of the award will be made at the annual meeting of the committee to be held on November 12 and 13 in New York.

The American Association on Mental Deficiency will hold its 1947 annual meeting in St. Paul. Inquiries should be addressed to Dr. L. N. Yepson, chairman of the program committee, Department of Institutions and Agencies, Trenton 7, New Jersey.

Behavior, an international journal of comparative ethnology, has been established to coordinate and survey the results of comparative behavior studies which have in the past been scattered throughout a large and varied selection of periodicals and other publications. The editors are: H. HEDIGER, Basal, Switzerland; P. PALMGREN, Helsingfors, Finland; W. H. THORPE, Cambridge, England; N. TINBERGEN Leiden, The Netherlands; and F. A. BEACH, Yale University.

The Western Psychological Association will hold its spring meeting in conjunction with the convention of the Pacific Division of the AAAS, at San Diego, June 19–20. The San Diego Psychological Society is acting as host to the Association.

The Psychology 1 staff at Dartmouth College has been experimenting with some final examination questions which seek to measure ability at psychological interpretation rather than memory. Ruch's book has been used, but most of these questions are equally appropriate with any other text. Biserial correlations have been computed for each item on a group of several hundred students. Instructors wishing a copy of the examination and the validity coefficients should write on an official letterhead to Dr. C. W. Horton, Bureau of Educational Research, Dartmouth College, Hanover, New Hampshire.

The Division of Clinical and Abnormal Psychology has mailed application blanks to all APA members known to be interested in joining that division. Interested persons who have not already received application blanks should request them from the secretary of the Division of Clinical and Abnormal Psychology, David Rapaport, The Menninger Foundation, Topeka, Kansas.

Representatives of the regional office of the USES met at the Department of Labor on March 17 for a conference on the General Aptitude Test Battery. It consists of a set of fifteen tests designed to measure ten aptitudes for a large number of occupations. Inquiries about the new tests should be addressed to Nathan Jaspen, Department of Labor.

The Fourth Annual Meeting of the American Society for Research in Psychosomatic Problems is at Haddon Hall, Atlantic City on May 3 and 4, 1947. DR. JAMES L. HALLIDAY of Scotland will be one of the guest speakers.

The Princeton University Press announces that *Personnel Research and Test Development in the Bureau of Naval Personnel*, edited by DEWEY B. STUIT, will be available in March for $7.50. It is an evaluative summary of the research in selection, classification, and training of personnel conducted by the U. S. Navy's Bureau of Personnel.

The instructional films in psychology which were produced and distributed by Warden and Gilbert of Columbia University have been turned over to the International Film Bureau, 84 Randolph Street, Chicago 1, Illinois. Requests for purchase or rental of the films should be addressed to that bureau.

The publication of *Persona*, an intercollegiate magazine of psychology, will be of interest to psychologists. The first edition of the magazine appeared in March. Inquiries and communications may be addressed to Arthur Bachrach, Editor, College of the City of New York.

The 1947 annual meeting of the Rorschach Institute will be held Saturday, May 17, at the New York State Institute, New York City. Inquiries

should be addressed to Dr. Marguerite R. Hertz, Division of Psychology, Western Reserve University, Cleveland 6, Ohio.

The Rorschach Workshops of the department of psychology of Western Reserve University, Cleveland, will be held from June 9 to 20. There will be two sections: the introductory workshop from June 9–13, and the advanced seminar in the Rorschach from June 16–20. One credit hour per workshop will be given and the fee is $20. Applications should be made now to the department of psychology, Western Reserve University.

The Rorschach test seminar for 1947 at Michael Reese Hospital, Chicago, will be conducted June 2–6. Two groups will be studied: children presenting personality problems and adults with severe disturbances. Dr. Samuel J. Beck will demonstrate the test records and analyze them for the personality structures projected. The course is open to persons with qualified backgrounds. For information write to Psychological Laboratory, Division of Neuropsychiatry at the Hospital, 29th Street and Ellis Avenue, Chicago 16, Illinois.

The Rorschach Institute summer workshops, conducted by Dr. Bruno Klopfer and associates, will be held at the Homestead, Crafts, RFD 1, Carmel, New York, from June 8–21; at the campus of Bard College, Annandale-on-the-Hudson, New York, June 22–July 3; at Claremont College, Claremont, California, August 3–16; and at the Asilomar Conference Grounds, Pacific Grove, California, August 17–30. Each workshop carries three points of credit and the tuition is $50. Inquiries and applications should be addressed to Dr. Klopfer, 3820 Waldo Avenue, New York 63, New York.

The psychology department of the Lynchburg State Colony announces that there will be openings for a psychological intern on or after August 1, 1947. The appointment will be for twelve months and the intern receives full maintenance at the Colony and a stipend of $100 a month. Inquiries should be addressed to Dr. D. L. Harrell, Superintendent, Lynchburg State Colony, Colony, Virginia.

The department of psychology of the University of Washington will offer 15 fellowships of $1500 and the remission of tuition fees for the year 1947–1948. The holder of such fellowships will have complete charge of two sections of introductory psychology containing not more than 40 students and meeting five times weekly. Applicants should have an interest in college teaching, and the intelligence, interest in psychology, and ability to carry on graduate research. Applications giving all relevant information should be sent to the chairman of the department of psychology, University of Washington, Seattle 5. Recommendations should be sent directly to the chairman of the department.

Applications are invited for five internships in clinical psychology at the Worcester State Hospital and one at the Worcester Child Guidance Clinic. These are 12-month appointments, beginning either in July or September, and provide for complete maintenance. Applicants with graduate training at least equivalent to that required for the MA are preferred. Applications should be submitted to Dr. Eliot H. Rodnick, Worcester State Hospital, Worcester 1, Massachusetts.

The last number of the *Psychological Monographs* to appear was Whole Number 274, Volume 59, 1945. Two more numbers are to be included in Volume 59. We cannot predict when these two *Monographs* will be printed, but we will announce their publication in the AMERICAN PSYCHOLOGIST.

Convention Calendar

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

September 9–13, 1947; Detroit, Michigan

For information write to:

Dr. Dael Wolfle, American Psychological Association

1515 Massachusetts Avenue, Washington 5, D. C.

ROCKY MOUNTAIN BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

May 1–3, 1947; Colorado College, Colorado Springs

For information write to:

Dr. Lillian G. Portenier, Department of Psychology

University of Wyoming, Laramie, Wyoming

MIDWESTERN PSYCHOLOGICAL ASSOCIATION

May 2–3, 1947; Edgewater Beach Hotel, Chicago, Illinois

For information write to:

Dr. Claude E. Buxton, Department of Psychology

Northwestern University, Evanston, Illinois

WESTERN PSYCHOLOGICAL ASSOCIATION

June 19–20, 1947; San Diego, California

For information write to:

Dr. Lester F. Beck, Department of Psychology

University of Oregon, Eugene, Oregon

ILLINOIS ASSOCIATION FOR APPLIED PSYCHOLOGY

May 1, 1947; Chicago, Illinois

For information write to:

Dr. Milton A. Saffir, Secretary

55 East Washington St., Psychological Guidance Center, Chicago 2, Illinois

---

EASTERN PSYCHOLOGICAL ASSOCIATION

April 25–26, 1947; Chalfonte-Haddon Hall
Atlantic City, New Jersey

For information write to:

Dr. J. McV. Hunt, Institute of Welfare Research

Community Service Society

105 East 22nd Street, New York 10, New York

SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

April 9–10, 1947; Princeton University
Princeton, New Jersey

Closed session for members only

For information write to:

Dr. Samuel W. Fernberger, University of Pennsylvania

Philadelphia, Pennsylvania

CANADIAN PSYCHOLOGICAL ASSOCIATION

April 10–12, 1947; Ottawa, Ontario, Canada

For information write to:

Dr. R. C. Myers, 100 St. George Street

Toronto, Ontario, Canada

NATIONAL COUNCIL ON REHABILITATION

April 29–30, 1947; The Coronado Hotel
St. Louis, Missouri

For information write to:

Mr. Holland Hudson, Secretary-Treasurer

National Council on Rehabilitation

1790 Broadway, New York 19, New York

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

December 26–31, 1947; Stevens Hotel, Chicago, Illinois

For information write to:

Dr. John M. Hutzel

American Association for the Advancement of Science

1515 Massachusetts Avenue, N.W.

Washington 5, D. C.

PENNSYLVANIA PSYCHOLOGICAL ASSOCIATION

May 10, 1947; Education Building,
Harrisburg, Pennsylvania

For information write to:

Dr. Morris S. Viteles, University of Pennsylvania

Philadelphia, Pennsylvania

INDIANA ASSOCIATION OF CLINICAL PSYCHOLOGISTS, INC.

May 3, 1947; Indianapolis, Indiana

For information write to:

Dr. Robert C. Scarf, Secretary

Ball State Teachers College, Muncie, Indiana

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 May, 1947 Number 5

In this Issue

The Clinical Method in Science: FREDERICK C. THORNE 159

The Future of Research in Clinical Psychology and Psychiatry: DAVID RAPAPORT . . 167

The Training of Clinical Psychologists: CHARLES A. ULLMANN 173

The Conference on Genetics and Social Behavior at the Roscoe B. Jackson Memorial Laboratory: J. P. SCOTT 176

Comment 178

Reply to "Professional Frustration in Government Psychologists": FRANKLIN V. TAYLOR 178

Psychologists' Opinions VS. Their Sense of Evidence: EDWIN G. BORING 178

More Effective Use of Machine Scored Examinations: RAYMOND C. BICE 179

Across the Secretary's Desk 180

Board of Directors 181

Psychological Notes and News 183

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

THE CLINICAL METHOD IN SCIENCE

FREDERICK C. THORNE
University of Vermont

HISTORICAL

CLINICAL psychology is entering a period of tremendous development at a time when the profession of medicine as dated from Hippocrates is over 2300 years old, the specialty of modern psychiatry as dated from Pinel is over 175 years old, and modern psychopathology as dated from the work of Freud is almost 50 years old. The significance of these facts is that clinical psychology has a rich medicopsychological heritage with which one must be familiar in order to gain historical orientation to current problems. Paradoxically, the history of medical psychology has not received the consideration it deserves in standard histories of modern psychology such as Boring (*2*) or Murphy (*4*). A *History of Medical Psychology* by Zilboorg (*7*) is a necessary supplement to these.

In contrast with clinical psychiatry and psychoanalysis which are direct descendants of medical psychology dating back from the ancients, clinical psychology in America has its roots in experimentally-oriented academic psychology which is more closely related to philosophy, physics, and mathematics than to medicine. Lacking the orientation of the clinical method as evolved in medical science, many clinical psychologists have approached their problems from the viewpoint of laboratory science and have shown a lack of understanding of the basic principles of clinical methods as developed in medical psychology. The result has been a schism between many clinical psychologists and medically trained physicians because of mutual failure to understand differing viewpoints. It is not desirable for psychologists to retrace the steps of generations of physicians and psychiatrists in discovering the principles of clinical science, or for physicians and psychiatrists to retrace the steps taken by modern psychology in applying the experimental method to the study of personality. In order to avoid a further waste of time and energy in rediscovering what is common knowledge to the older clinical professions, the study of the evolution of clinical science in general and medical psychology in particular should be a basic requirement in the training of all professional students in the psychological sciences.

CLINICAL SCIENCE

The Nature of Clinical Science. Modern medicine is both a clinical science and a technology. The historical development of modern medicine has been characterized by increasing emphasis on the basic sciences of anatomy (gross, microscopic, and comparative), biochemistry, physiology (normal and pathological), and pathology (gross and microscopic). Both medical education and clinical practice are currently oriented about a thorough foundation in basic science which operates to introduce the experimental viewpoint wherever applicable. Although medical science has not utilized experimental and statistical techniques to the same degree as psychology, recent trends indicate that knowledge of these methods is rapidly becoming widely disseminated in medical science. In most modern medical teaching centers, there is as rigid adherence to experimental methods as may be found in psychology.

Similar comments are applicable to the clinical handling of individual cases. Formerly, clinical technology was mainly empirical, i.e. based on study and "experience" rather than experiment. To a certain degree, therapy must always be empirical since the primary consideration is the welfare of the patient rather than the conduct of a scientific experiment. Perhaps the most significant development, however, is the increasing application of the experimental approach to the individual case and to the clinician's own "experience." Ideally, diagnosis (description) and treatment of each individual case may be regarded as a single and well controlled experiment. The treatment may be carefully controlled by utilizing single therapeutic factors, observing and recording results systematically, and

checking through use of appropriate quantitative laboratory studies.[1] In addition to the general scientific orientation to the individual case, there are frequent opportunities in clinical practice to conduct actual experiments to determine the validity of diagnosis or the efficacy of treatment. For example, a simple experiment may be set up in which a placebo and a specific drug may be administered according to a definite pattern such as ABBA with careful recording and mathematical analysis of results. In the most advanced medical center practice, experimental methods have largely replaced the intuitive methods formerly so commonplace. Individual clinicians are encouraged to apply experimental and statistical methods in the analysis of case results, and larger scale analyses are made of the experience of the whole clinic over a period of years. Thus, the clinician comes to regard each individual case as part of a larger sample.

Methods of Clinical Science. Although the primary emphasis is on the individual case, the basic methods of clinical science involve the same techniques of description, classification, and explanation as are standard in experimental laboratory science. The fact that description and classification in clinical science have the additional objectives of diagnosis and rational therapy does not detract from their essential validity and reliability, since all stages in the process may be objectively quantified by the same methods of analysis as are applicable to any other type of data. These points need to be clearly recognized as offering a rebuttal against the oft-repeated statement that clinical practice involves an art or a technology rather than a science. The increasing availability of scientifically validated tools and of clinicians whose judgments may be demonstrated to have high validity and statistical reliability is rapidly minimizing the necessity for the clinican to be an artist rather than a scientist. Both in medical practice and clinical psychology, "intuition" has long since been displaced by objective methods which may be taught and utilized by all who have adequate training in these fields.

[1] An example of the experimental therapeutic approach in modern medicine may be seen in the abandonment of older empirical "shot-gun" methods in which several drugs were included in one prescription in the hope that one would be effective. Current practice involves prescribing specific drugs singly so that the effect may be experimentally determined.

Description in Clinical Science. Clinical medicine has slowly evolved a system for eliciting and describing the physical characteristics of the organism with special reference to pathological deviations. This description is technically known as *physical diagnosis.* The subject of physical diagnosis represents the accumulated experience of many generations of physicians who have developed an objective system for describing every known sign; it can be taught to medical students with such exactness that the results of the examinations of competent physicians show a very high reliability. In medical science, when a new sign is discovered, it is immediately investigated by the experimental sciences of physiology and pathology to verify its aetiology and significance.

Techniques for objective description have been slower to develop in psychological science because of the extreme complexity of personality. Psychiatry, however, has evolved the concept of *mental status* which recognizes that personality characteristics are in constant flux so that any description can validly refer only to the moment at which it was made. Methods for objectively determining mental status are outlined in all standard psychiatric textbooks. The best examples of case history involve verbatim reports of the subject's actions and words with a minimum of interpretation by the observer. Clinical psychiatry has developed methods for personality study in the minutest details as evidenced by case reports of single individuals totaling hundreds of pages.

Terminology of Clinical Science. The modern era of medicine has been characterized by exacting attention to matters of terminology. The prescientific era lacked a uniform system of nomenclature and utilized personal names and popular terms to label new discoveries. During the past two decades, the basic essentials of adequate terminology have been determined and made operative. New syndromes of disease are described in terms of the basic pathological processes. A standard nomenclature of disease has been accepted. The metric system has become standard for describing the physical attributes of objects. The use of personal names and popular terms has been discontinued. The effect of these innovations has been to standardize medical science throughout the world.

Validity and Reliability of Clinical Data. The

basic validity and reliability of the data collected in clinical science are determined by the cumulative efforts of succeeding generations of observers trained in the most advanced methods of their times. For thousands of years, data have gradually accumulated and been transmitted through formal education. The process was painfully slow until the modern era of scientific medicine. Within the last century, all data gathered in the prescientific era have been carefully rechecked with experimental methods to determine their validity, and an objective body of fact gathered which will probably stand the test of time.

In the United States alone there are over 150,000 registered physicians; the majority are graduates of grade A schools where they were exposed to objective methods of thinking and working. With such a large number of practitioners, every new discovery now receives an intensive clinical trial which quickly proves or disproves its validity. The psychologist will be interested in knowing that this mass clinical trial frequently results in disproving conclusions drawn from the most intensive preliminary experiments possible in the laboratory. In effect, the results accumulated by the entire profession constitute an experiment on a grand scale not possible in the laboratory. An interesting example of this general principle may be taken in the standardization of a new drug. Federal laws require extensive animal experiments to determine basic properties and toxicity. The drug is then released for preliminary human experiments. If the drug is safe and efficacious, it is finally released for general clinical use. In many instances, complete information has been obtained only after several years of clinical trials on a mass basis.

Prediction in Clinical Science. Extensive training under carefully controlled conditions provides the physician with a wide knowledge of clinical syndromes, the range of variation within a syndrome, and its typical clinical course. It is this ability to predict the clinical course of a single case, on the basis of data from an adequate sample of similar cases, which makes possible valid prognosis. Apart from its predictive values in understanding any particular case, accurate prognosis serves as a check on the validity of the rationale of the therapy. Given a wide experience concerning the range of manifestations of a disease, it is possible to predict eventual outcomes with genuine validity. Such accurate prognosis permits the anticipation of problems before they have developed and makes case handling more efficacious. It is in this respect, perhaps more than any other, that the older clinician is perceptibly more skillful than the younger, other factors being equal. In spite of the imposing complexity of theoretical knowledge as evidenced by impressive textbooks and medical center education, there is no substitute for experience in the translation of knowledge into practical case handling. With all the laboratory procedures available in the medical center, it is a significant fact that the experienced country practitioner utilizes the older methods of direct examination and prognosis to produce results in case handling which compare favorably with the best medical center practice.

DIAGNOSIS IN CLINICAL SCIENCE

In the following presentation, *diagnosis* refers to the description of the organism and its behavior by a variety of methods whose basic purpose is to discover the personality dynamics of each individual case. It is implied that the more complete the description, the more complete will be our understanding of why, when, where, and how the individual got that way. Once this information has been obtained it may be utilized for a variety of purposes outlined below.

Objectives of Diagnosis. Historically, the objective of diagnosis was principally to identify a disease. In modern medicine and psychiatry, however, diagnosis involves more than mastering the nomenclature of diseases and attempting to recognize a known syndrome of pathological phenomena. Psychodiagnostics has evolved beyond problems of classifications of "diseases" to the more mature objective of completely describing each individual case in order to demonstrate the aetiological factors whose dynamic interplay has produced the unique configuration of personality traits which is a person. Among the more important objectives of diagnosis are:

1. To demonstrate the aetiological factors.
2. To differentiate between organic and functional disorders.
3. To discover the personality reaction of the organism to its disability.

4. To discover the extent of organic damage with resulting functional disability.
5. To estimate the extensity or intensity of the morbid process in relation to actuarial data concerning type and severity.
6. To determine the prognosis or probable course.
7. To provide a rational basis for specific psychotherapy.
8. To provide a rational basis for discussing the case with the patient and relatives.
9. To provide a scientific basis for classification and statistical analysis of data.

Accurate diagnosis orients the clinician to many relevant facts relating to the pattern of disorder in general and to the particulars of the individual case which may determine the success or failure of the whole process of case handling. Brill (*3*) emphasizes that an inability to arrive at reliable diagnoses may threaten a psychiatrist's whole practice, particularly in cases where it is necessary to organize the resources of the whole environment to produce desired results. The beginner is primarily concerned with diagnosis as a method for identifying clinical syndromes. Identification is an important but preliminary step; the experienced clinician utilizes diagnosis as the foundation for all rational case handling.[2]

Principles of Diagnosis. Accumulated experience with problems of diagnosis has resulted in the acceptance of the following basic laws:

1. *The law of parsimony.* Lloyd Morgan's canon states that the simplest explanation involving the fewest possible causal factors is usually the most probable; an attempt should be made to explain all symptoms by one rather than multiple aetiological agents.
2. *Evaluation of the whole organism.* Disorders of parts or part-functions should be related to the whole organism. The psychobiological principles of Adolf Meyer represent an attempt to classify disorders as different patterns of reactions of the total organism as it meets the environment.
3. *Principle of differential diagnosis.* With complex diagnostic problems, it is necessary (a) to recognize the probability that a diagnostic problem exists, (b) to list the known syndromes which must be considered, (c) to weigh and evaluate the observed facts in the light of diagnostic possibilities and to reason from them to logical conclusions, and finally (d) to accept a diagnosis which explains all signs and symptoms.
4. *Laws of probability.* In the absence of pathognomonic evidence concerning the nature of a morbid process, mathematical probabilities favor those conditions for which there is actuarial evidence of higher incidence. Do not play the long shots.
5. *Evaluation of evidence.* The consensus of medical opinion is that the use of the senses is the most important factor in diagnosis, i.e. that there is no substitute for the careful and minute observation of the living patient. Where clinical findings from observation disagree with laboratory findings, the former have frequently proven to be more valid since human errors exist in laboratory work too. Where an apparent conflict exists between subjective reports of the patient and objective signs, the latter have greater weight.
6. *Cooperative studies.* The major contribution of modern medical center practice is the cooperation of specialists operating as a team in clarifying obscure diagnostic problems.
7. *Pathognomonic signs or symptoms.* Clinical data should be analysed to discover those pathognomonic signs which are of specific localizing value.
8. *Koch's postulates.* Although derived from bacteriology and not directly applicable to psychology, these laws state that in order to establish any agent as the definite aetiological cause of a morbid process, it is necessary to demonstrate that (a) the specific factor must always be associated with the disease; (b) when isolated in pure culture, and inoculated into a healthy susceptible animal, it must always produce the disease, and (c) it should be obtained again in pure culture. Some such

[2] Compare with the viewpoint of nondirective counseling as expressed by Rogers (**5**). As emphasized by Super (**6**), nondirective methods are based on the diagnosis that all maladjustments are caused by emotional conflicts, which postulate in itself is questionable. Such a unidimensional cause for maladjustment is not only inconsistent with accumulated experience but leads to the therapeutic fallacy of treating every morbid process with a single panacea.

criteria are needed in psychological science to establish definite standards for evaluating psychogenic factors.

Diagnosis must be a continuing process which can never be complete since the constantly evolving pattern of an individual life is not finished until death. The experienced clinician recognizes that the exploration of all the areas of personality is a lengthy process in which it is not unusual to carry a case for years before evidence vital to a valid diagnosis is discovered. In personality study, diagnosis concerns the description of a continuing process rather than the identification of a disease.

Different diagnostic approaches. Although complete description would ideally explain the dynamic personality configurations of each individual case, the practical situation frequently demands that the clinician construct a diagnostic summary of the dynamic factors operant in an individual case. Whether the objective is to identify a disease as in medicine or to describe the morbid characteristics of an organism-meeting-its-environment, it is necessary to make a valid analysis of clinical data and the following methods have classically been used:

1. *Inductive methods.* These involve reasoning from the particular to the general. Given a collection of signs, symptoms, and other data, an attempt is made to differentiate a more general pathological process capable of explaining all the clinical findings. This process may involve the following steps:
   a. Collecting all available evidence descriptive of the morbid process.
   b. Searching for pathognomonic signs.
   c. Postulating a pathological process to explain clinical data.
   d. Identifying the postulated pathological process with a known disease.
2. *Deductive methods.* These involve reasoning from the general to the particular, i.e. from premises or theories to concrete examples. Given a knowledge of pathology, an attempt is made to correlate clinical findings with standard patterns of disease according to the following steps:
   a. Listing all known syndromes even remotely related to clinical findings.
   b. Determining individually whether the data are congruent with a known syndrome.
   c. Various outlines may be utilized where obscure clinical findings cannot be immediately classified, i.e.
   i. In terms of aetiological factors such as heredity, infection, trauma, neoplasm, etc.
   ii. In terms of known disease entities, i.e. psychasthenia, etc. (This approach has been abandoned in the psychological sciences.)
   iii. In terms of dynamic personality processes, i.e. aggression, rejection, over-regulation, over-protection, etc.
3. *Diagnosis by exclusion.* Negative diagnosis by the careful exclusion of other diseases is notoriously invalid and generally unacceptable in modern clinical practice.
4. *Failure to diagnose.* Modern practice has discarded the older tendency to label a disorder as "idiopathic" when its cause was unknown. Other "waste-basket" diagnoses such as "hysteria," are also no longer acceptable. The term "undifferentiated" is used in the absence of a definite positive diagnosis.

It is not the specific purpose of this paper to discuss in detail the various diagnostic methods which are currently available to implement the general approaches outlined above.

Role of pathology. Psychologists in general have not shown understanding of the role of the basic science of pathology in modern medicine. Pathology is concerned with the aetiology and morbid processes characteristic of each syndrome of disease or disorder. The emphasis in gross or microscopic anatomic pathology concerns the morphology of disease; in pathological physiology, the primary concern is with the pathogical functioning in disease; and in psychopathology, the emphasis is on a disorder in the total configuration of the individual meeting the environment. Pathology, whether morphological, physiological, or psychological, has reached its present important position in medical science because of the recognition that rational therapy depends upon valid diagnosis which depends upon an exact knowledge of the aetiology and dynamic nature of morbid processes. In medicine, pathology is (a) recognized as the basic course in

preclinical basic science, (b) required for certification by the specialty boards, and (c) required in medical facilities for approved ratings.

The evolution of psychopathology as a formal subject has occurred more slowly. The methods of gross and cellular pathology are not directly applicable to psychological problems. Two important historical trends are demonstrable. *Abnormal psychology* contributed experimental studies of sensation, perception, memory, learning, thought, affective life and other more complex phenomena such as hypnosis. *Psychiatry* inherited the medico-psychological tradition which included major contributions from Virchow, Kraepelin, and Freud. Failure of these two historical trends to amalgamate is explained by the academic isolation of academic psychology and clinical psychiatry; an integration is long overdue. Whatever the subject matter comes to be called, it is basic to valid diagnosis and therapy.

A practical outgrowth of the subject of pathology is the *clinical pathological conference* which is a device for correlating and checking clinical findings with the results of gross, microscopic, laboratory, and other findings. In the CPC, the physician first makes a complete presentation of the clinical and laboratory findings in a case and then indicates his differential diagnoses, following which the pathologist presents his findings which prove the actual causes of the disease. In the psychological sciences, the conference might have a slightly different organization in which the clinican would present his analysis of the individual personality including evaluations of intelligence and personality dynamics following which objective evidence from psychometrics, projective testing, electroencephalography, etc., would be presented. The CPC is very effective in evaluating the clinical abilities of individual practitioners and in constantly rechecking the validity of diagnosis and treatment. Not only is the physician stimulated to perfect his diagnostic and therapeutic abilities, but there is a public discussion of his case handling by his colleagues. In contrast with older attitudes in professional ethics which tended to conceal and perpetuate error, the CPC operates to reveal and correct the causes of error and to improve the clinical abilities of all who participate in them.

CLINICAL SCIENCE AND THERAPY

Many of the observations which have been made in relation to scientific methods of diagnosis are also applicable to therapy but in lesser degree. In matters of diagnosis, scientific methods are almost universally applied within the limits of existing knowledge. In therapy, however, the major objective is to relieve or cure the patient and this sometimes conflicts with the systematic application of scientific methods. The modern era has been characterized by a constant revision of therapeutic methods in conformance with the latest discoveries of basic science. Wherever possible, experimental and statistical methods have been utilized in the evaluation of therapy both in individual cases and with large samples of clinical materials. Masses of data from large samples of a population have provided a validation of therapeutic methods far beyond that yet obtained from experimental laboratories.

Definition of therapy. Formal therapy should be differentiated from common-sense techniques as applied by laymen. In its broadest connotations, therapy includes all forms of *case handling* derived from a scientific evaluation of the individual case by competent personnel. Rational therapy, whether directive or nondirective, proceeds logically from aetiological studies, clinical examinations, and laboratory studies from which a diagnostic formulation results. Depending upon therapeutic indications, case handling may range from the most superficial contacts as in counseling to the most intensive depth therapy as in psychoanalysis.

Principles of therapy. Modern medical therapy is based upon a rigid adherence to materialistic concepts of the aetiology of disease. The prescientific dependence upon empiricism and trial-and-error methods has been displaced by a detailed knowledge of pathology, accurate diagnosis, and the rational formulation of a therapeutic plan which is specifically adapted to the individual case. In contrast with older irrational methods in which various combinations of methods were combined, modern practice emphasizes the selection of specific remedies utilized singly according to the latest scientific knowledge. Among the commonly accepted principles of modern therapy are:

1. *Adequate diagnostic study.* Except in emergency or to give symptomatic relief, the basic essential to rational therapy is a valid diagnosis.
2. *Detailed knowledge of limitations of methods.* The clinician should know the exact indications and contra-indications for each therapeutic tool. Choice of methods is determined only after a careful consideration of indications.
3. *Treating basic causes.* Treatment should be directed toward basic aetiologic factors rather than symptoms. Also, the whole organism should be treated rather than part functions.
4. *Plan of therapy.* Alexander (*1*) and others have stressed the importance of making a definite plan of therapy for each case with specific attention to individual needs.
5. *Specific therapy.* Where possible, methods known to have specific action should be chosen. Where symptomatic, palliative, or systemic therapy is indicated, these also should be prescribed specifically.
6. *Combinations of methods.* Where possible, the use of a single therapeutic agent at one time is indicated. This provides for more controlled variation of the experimental factor and facilitates scientific analysis of data. Where combinations are desirable as in the total push method described by Myerson, these should be prescribed rationally.
7. *Evaluation of results.* In the absence of experimental or statistical proof, therapeutic results are evaluated with extreme caution.
8. *Scientific analysis.* Where possible, the latest scientific methods are to be utilized in the analysis of individual and group data.
9. *No miraculous panaceas.* The history of clinical science reveals that a true panacea has never been discovered in spite of claims made for new drugs and methods. Modern pharmacology has demonstrated that only a few of the thousands of known drugs have any specific effect. In the even more complex area of psychotherapy, it appears improbable that any one method has universal applicability.
10. *Eclecticism in clinical science.* The complexity of the human organism and its disabilities is so great, that methods of therapy must be equally numerous and complex. Adherence to any particular "school" of thought will usually limit the therapist's effectiveness to the situations for which his method is specific. Eclecticism is the keynote of modern science.

Objectives of therapy. The rigid experimentalist sometimes overlooks the truism that the basic objective of therapy is to improve the patient's condition. There are situations in which the demands of scientific method and the needs of the individual patient are incompatible. Few patients desire to be scientific guinea pigs nor would their relatives condone this even though the patient desired it. Modern practice, therefore, usually represents a compromise between what is scientifically ideal and what is practically desirable. This conflict is not serious or insoluble in most cases since what is best scientifically is also best for the patient. Within the limits of this general orientation, we may consider a number of more limited theoretical objectives as follows:

1. *Prevention.* Even more basic than cure is prevention.
2. *Correction of aetiological factors.* Anatomical, physiological, and psychological factors are specifically treated.
3. *Palliation.* Symptomatic treatment directed toward the relief of subjective symptoms is of vital import to the patient.
4. *Systemic support.* Nonspecific measures are directed toward the improvement of the state of health of the total organism.
5. *Facilitating growth.* Treatment should ideally facilitate rather than interfere with natural developmental processes.

More specifically, psychotherapy seeks to achieve more limited objectives which are specifically corrective of various pathological syndromes which are dynamically related to the problems of the organism meeting the environment.

6. *Reeducation.* Since human behavior is regarded as being largely learned or acquired through experience, therapy seeks to reeducate and teach new modes of adjustment.
7. *Expressing and clarifying emotional attitudes.* From the cathartic method of psychoanalysis to current nondirective methods of counsel-

ing, major emphasis has been placed on methods of securing emotional release and expression in a permissive, accepting environment.

8. *Resolving conflict and inconsistencies.* Since conflicts and inconsistent attitudes threaten personality integration, therapy seeks to remove repression and ambivalencies in the mental economy.
9. *Catalysing maturation.* Recognizing that many morbid processes involve immaturity and regressive reactions, therapy seeks to catalyse maturation to the most complete state of development of which the individual organism is capable.
10. *Self-understanding.* All psychotherapy has the objective of stimulating the client to understand and accept himself, to develop genuine insight into feelings, attitudes, and motivations.

Conduct of practice. The medical profession has always insisted that the patient be completely free to choose his physician. The physician is free to accept or reject the relationship, but once having accepted the patient for treatment, he is legally responsible for handling matters of diagnosis and therapy according to the highest standards existing in his locality until such time as the physician notifies the patient that he is withdrawing from the case. Once having chosen his physician, the patient is supposed to follow the directions of the physician who is no longer legally responsible if the patient fails to do this.

The ethical physician conducts his practice in accordance with the Hippocratic Oath and the recognized ethics of the profession. Errors of commission and omission caused by failure to observe ethical principles or to apply accepted methods of treatment make the physician legally responsible for malpractice. Since scientific medicine is now recognized universally as the basis for standard practice, it follows that increasing pressure is being brought upon the individual physician to conform to scientific practice wherever possible.

GENERAL BIOLOGICAL ORIENTATION

The broad orientation of modern medicine is in the direction of biological science. It is significant that such recognized leaders as Sigmund Freud and Adolf Meyer had a genuinely broad and eclectic viewpoint based on intensive basic training in the biological sciences which are required in medical education. Psychologists have theoretically accepted the principle of the desirability of broad biologic training but in practice their training and experience have been much more limited. The factors which have kept psychology, psychiatry, and other specialties in scientific isolation are artificial and must soon be dispelled. Physicians will become better doctors when they are oriented toward the contributions of psychology, and psychologists will become more effective as they acquire a more general biological and medical orientation.

SUMMARY

The history of medical psychology has great significance for the development of clinical psychology; it can profit from the long experience of medicine. Medical practice has evolved over a period of more than 2300 years with a resulting accumulation of general principles and methods of thinking which are significant for all clinical specialties. It is particularly important to integrate the contributions of the modern era of scientific medicine with clinical psychology to break down artificial barriers of isolation which have impeded the mutual development of medicine and psychology. The evolution of the clinical method in science has been reviewed with special reference to problems of diagnosis and therapy.

REFERENCES

1. ALEXANDER, F., FRENCH, T. M. ET AL. *Psychoanalytic Therapy.* Rona'd, 1946.
2. BORING, E. G. *A History of Experimental Psychology.* Century, 1929.
3. BRILL, A. A. *Lectures on Psychoanalytic Psychiatry.* Knopf, 1946.
4. MURPHY, G. *Historical Introduction to Modern Psychology.* Harcourt, Brace, 1929.
5. ROGERS, C. R. Significant aspects of client-centered therapy. *Amer. Psychologist,* 1946, **1**, 415–422.
6. SUPER, D. E. Book review of ROGERS, C. R. and WALLEN, J. L. *Counseling with Returned Servicemen. J. appl. Psychol.,* 1946, **3**, 565–568.
7. ZILBOORG, G. *A History of Medical Psychology.* Norton, 1941.

THE FUTURE OF RESEARCH IN CLINICAL PSYCHOLOGY AND PSYCHIATRY[1]

DAVID RAPAPORT

The Menninger Foundation

WE HAVE been and still are bombarded in our daily newspapers and in our professional journals with statements of the tremendous need in the community for psychiatric service. We have been made keenly aware of the fact that our present psychiatric facilities and personnel are totally inadequate to handle the actual size of the psychiatric problem in the community. I shall dwell on this issue only briefly. The long waiting list in our Department of Clinical Services at the Menninger Clinic proves the point. Good documentary evidence can be obtained from data of the Veterans Administration which absorbed into its services a great part of the psychiatrists and clinical psychologists available in this country and still finds most of its installations understaffed.

The tremendous demand for psychiatric education has also been hammered at us in the last few years with penetrating power. Documentary evidence for this can be had in the number of applicants we have had to reject in our schools. Further evidence for this is the fact that the Veterans Administration is working on setting up still more centers for the education of psychiatrists and psychologists. Would it not seem correct then to say that in times of such great need for actual services for training research is a superfluous luxury? Let me quote to you a passage from Raymond B. Fosdick's (President Rockefeller Foundation) *Morton Memorial Lecture:* "I talked the other day at Lake Success with one of the high officials of the United Nations. 'The chief thing we lack at the present time' he said 'is knowledge, tested knowledge. We seem to have to guess our way along'." If I understand it correctly, the United Nations official was complaining that the time is passed when political art could solve the problems of international relations. The problems have grown so tremendous and complex that tested *knowledge* is necessary instead of the *art* of 'guessing our way along.' Psychiatry and clinical psychology are in the stage in which there is a great discrepancy between the meagerness of teachable tested knowledge on the one hand and the richness of our experience and versatility in the clinical art on the other. It is far from me to assume that dealing with people, with human beings, will not always retain to some extent the character of art. It is far from me to assume that therapy will not always be to some extent dependent on the individual ingenuity, the individual art of the therapist. How should I think otherwise when even the application of well-tested tools, well-tested knowledge of machines requires the individual ingenuity of the mechanic. The crux of the matter is whether we shall have well-tested tools, well-tested knowledge, applied with clinical ingenuity or whether all shall be left, as it is grossly at present, to the ingenuity of the individual therapist.

It is the job of research, and research alone, to produce tested knowledge that can be used *with* the art of the clinician. The question could be raised: Is it possible that clinicians in their clinical work produce this tested knowledge? The atmosphere of the Hippocratic oath, the importance to the clinician to discharge his duties to the patients first, is inimical to research. Add to this the present-day never-ending stream of patients and there is no room left for contemplation, no peace for theoretical, systematic clarification. We have seen these years a stream of ingenious, topflight clinicians lecture in our institution, from all over the country and even from overseas. I believe that it was our overwhelming impression that—excepting a very few like the late Fenichel—systematizing ingenuity was not a part of these clinicians' equipment. On the other hand the academic men who lectured here showed that the clinical immediacy of the problems

[1] Excerpt from the annual report of the Director of the Research Department of the Menninger Foundation to the Board of Trustees for the fiscal year 1945–1946.

and the formation of concepts in terms meaningful and useful to clinicians were more or less missing in their thinking. The task therefore is the creation of a research atmosphere within the clinical setting which will introduce academically trained people to clinical problems and induce clinical people to clear theoretical systematic thinking. Only this coupling can assure substantial development in psychiatry and clinical psychology. This development, however, will not take place if academically trained people coming into the clinical setting will only be introduced into its hectic character, its restlessness, its lack of peace. Nor are clinicians going to be induced to theoretical thinking simply by living side by side with academic people. Only the creation of an island of peaceful work in the clinical setting within which sufficient time for contemplation is given, will make such a marriage fruitful.

I have raised the question whether or not, at this time of great demand for psychiatric services and for psychiatric education, research should be considered a dispensable luxury. After the foregoing considerations my answer would be that it is clinical services and teaching, insofar as they deplete all our sources of research personnel and finances, that should be considered at this time luxuries, rather than research.

However, without clinical practice clinical psychological and psychiatric research would tend to become sterile. Without teaching it would become divorced from the responsibility and the possibility of self-perpetuation by raising new researchers. If it were not for these facts, one would want to recommend that the most able psychiatrists and clinical psychologists be withdrawn altogether by some means from practice and teaching to be cloistered for research.

If we turn, however, from this enlightening paradox to the confused and confusing reality, we find, besides the fact of tremendous need for service and training, further facts which deserve our serious consideration. I believe that in charting the course of our research it is our responsibility to take stock of the major factors which are influencing psychiatric and clinical psychological research in the country. I feel that together with formulating our own research plans we have to formulate also general principles for which all of us will stand in the various responsible positions in our respective professions and in American life. Without effective work on this broader plane we stand little chance to realize our own research plans.

There seem to be four major factors that have decisive influence at present upon the future of research in psychiatry and clinical psychology: (1) The distribution of talent, (2) public awareness of the need for research, (3) the National Mental Health Act, and (4) the private foundations. Let me take these one by one.

Psychiatric and clinical psychological talent at present is thinly spread all over the country. Years ago already Gregg in his Salmon lectures clearly recognized one of the factors responsible for this thin spread. He concluded that the greatest single enemy of medical research is the competition of private practice with its great earning opportunities and lure for the able and self-assertive man. If we consider in addition that the Veterans Administration has opened a large number of positions compared with the number of available psychiatrists and clinical psychologists—and that with the increasing need for teaching, new departments of psychiatry and schools of clinical psychology have opened up, we have plentiful explanation for this spreading thin and diverting from research of psychiatric and clinical psychological talent. Further, we find that able young psychiatrists and clinical psychologists, the future promise for psychiatric and clinical psychological research, are now absorbed by institutions and universities in high teaching and administrative positions. These men who were slated in our minds for research are now casting around for more people to add to their departments or are now engaged in creating private clinics. They do all this with the pipe dream that when they find enough people to man their respective institutions they will have opportunity for research. Yet we know very well the facts of clinical practice and education: the need for therapy is insatiable; there come always new and more patients; the demands of education go beyond all bounds because a professional discipline which is grossly an art can only be taught by precept. The energies of teachers and clinicians are all absorbed by these tasks. I believe that there are two things that can be done: first, we must build up professional public opinion which will build up dams against the lures of private practice by giving recognition and standing to

people in research and not merely, as it has been done so far, to people who write papers. Professional standing, professional respect and reward for people in painstaking, systematizing work has to be enhanced in order to make the positions for such work attractive. Still along the same lines, the main institutions responsible for the thin spread of the professional talent have to strive to concentrate talented men in a few chosen places and enable them to devote themselves freely to research work. We know that the Veterans Administration has provided generously for research finances through direct grants as well as through grants to the National Research Council. We have to say to the Veterans Administration that money alone will not do it. First, research talent will not arise without concentration in a few places of able people. Second, research positions have to fulfill two criteria: they must be financially attractive and have tenure, and they must not be linked with a demand for immediate production. Research does not flourish if it has to deliver the goods immediately. Good thinking is not characterized by the ability to produce immediately; though good thinking can in real need be called upon for immediate production. Physics and chemistry which rose to the national emergency in the course of the war did not do so merely because of pressure but rather because many years of painstaking preparation made their thinking sufficiently good to rise to real need. Pressure alone would have never done it; pressure alone will never do it.

The second major factor that has a decisive influence upon psychiatry's future is public awareness of the need for psychiatric and clinical psychological research. Psychiatry and clinical psychology have been oversold. A discipline whose earning power is great and which in addition is oversold is in danger that its needs will not be seen. That is particularly true of research needs. That this is not merely a theoretical speculation is clearly shown by the fact that even the planned appropriations of the National Mental Health Act which are monumental compared with research finances we have had so far for psychiatry and clinical psychology do not come up to the advertised or even the actual size of the psychiatric problem. The other danger in the psychiatric and clinical psychological position is the great public demand—due to overselling—for the application of psychiatry and psychology in industry, in personnel relations, and in social and political affairs. Psychiatrists and psychologists were only too tempted to hear these demands. Yet the fact is that well-tested knowledge is not extant and psychiatrists and psychologists are—to use Fosdick's words—"guessing their way along." I would suggest that we let others "guess their way along" even if with the help of psychological insight we would be able to guess ten, twenty, or thirty per cent better. We certainly could not do any better than that. It should be hammered into psychiatric and psychological as well as into the more general public consciousness that psychiatrists and clinical psychologists must be left to cope with the patients and with the enormous expanse of research problems and not run to try to solve the ills of the world right away. We have to discipline ourselves and let first things come first. Surely, we would want to contribute to the solution of the world's problems, to bridging the gap that came about when technological progress outstripped development of our interpersonal, social, and international relations. However, we will be best able to do that if we, for the time being, resign ourselves as professionals to further establish the science of our own profession and take stands on the social, political, and international affairs only as individuals, acting on our own personal responsibility. Public consciousness has to be influenced, however, in another respect also. In our whole huge country all the research professors in psychiatry can be counted on the fingers of one hand. Researchers hardly have tenure. They are hoping to become regular professors, research professorships being scarce, and when they achieve this hope they are weighed down with duties of education and research aims are relegated at best to minor importance. This is true also where research is connected with clinical work; there practical duties lure away from research and militate against systematic thinking, while propagating artistic intuitive thinking. We must build up a public consciousness which will value long-range thinking, which will not reward its thinkers—as Cannon put it—with deanships, a reward of a Trojan horse character.

Our civilization underestimates leisure. It fails to distinguish it from idleness, and thereby cuts a rich source of power and inventiveness, of imagi-

nation and creativeness. I believe I speak with the authority of the best of researchers of this country when I say that we will have to educate our public by rising as knights in defense of leisure, leisure for the researcher and thinker, leisure institutionally created and protected. We will have to do this by providing finances, and positions, by protecting ourselves from premature social application, by creating groups of people who can fertilize the thinking of each other instead of spreading our talents very thinly.

The third major factor in psychiatry's future is the National Mental Health Act. The existence of this Act is a great step ahead. We must not forget, however, that research is not the sole purpose of this Act and that within its functioning the relative emphasis may be either on supporting services, or education, or research. So the considerations here advanced concerning the relative importance of these should hold for the National Mental Health Act also. Research will be fostered by it primarily only if the general consciousness concerning need for research is foremost in the psychiatric and clinical psychological community as well as in the broader community. As to the problem of research proper within the Mental Health Act, a series of considerations deserve our attention. Foundations that have supported psychiatric research in the past have contributed little to the firm grounding of psychiatric research in general and to security, tenure, and leisure of the researcher. They supported isolated researches in psychiatry and even in clinical psychology but the general air was that these researches are to be undertaken in order to "deliver the goods" within a given range of time. Most of these have been short range grants and guaranteed no tenure. The researcher's security therefore depended upon his carrying another job as well. This, of necessity, took his leisure away. There have been only very few exceptions to this rule. Now the National Mental Health Act will not be in a position to endow research institutions or to create continuous fellowships or research positions in places other than the National Mental Health Institute. It should, therefore, be vigorously pointed out to the administrators of the National Mental Health Act that they will contribute to building up psychiatric and clinical psychological research and to determining its policy for the country by giving long-range grants. These, however, will depend upon annual appropriations by Congress. What other safeguards could be sought within the functioning of the National Mental Health Act for the continuity of psychiatric and psychologic research? The only one, I believe, is that the administration of this Act support researches formulated in general terms. That is, not to support mainly researches concerning isolated bits of problems carried on mainly by isolated investigators but rather to support groups of investigators who attack general problems without binding themselves to obtain specific results with specific methods. I have in mind researches like those conducted in schizophrenia at Worcester State Hospital where the grant was given for any investigations their changing team of investigators cared to undertake and was in the position to undertake in the field of schizophrenia. Similarly, I have in mind broadly defined research projects leaving it up to the team and its changing interests, facilities and opportunities, to define what they will be doing. Thereby the project would not terminate when an isolated attack seems to have exhausted its usefulness or when an investigator leaves, but will be continued whether or not one attack seems to have survived its usefulness.

Another problem pertaining to the Mental Health Act is that its existence does and will influence profoundly the attitude and relationship of private foundations to psychiatry. We already know of two foundations which have suspended allocating funds to psychiatric research pending decision until after the policies of the National Mental Health Act have been established. This imposes an added responsibility upon administrators of the Mental Health Act.

Still another problem is the National Mental Health Institute planned in the bill setting up the Foundation. It is not certain whether under the present precarious personnel situation such an institute will actually play a positive or a negative role in the development of psychiatric and clinical psychological research. Since, however, years will pass between the bill, the appropriation, the erection of the building, and the selection of the personnel, it is premature to judge the significance of such an Institute.

Now about private foundations. Grants for psy-

chiatric and psychological research will be supplied by the National Mental Health Act and probably in such amounts and to so many places that considering the present shortage of research personnel no justified demands on such money will remain unfulfilled. What will be the function of private foundations in the field of psychiatry and psychology? I believe that it is the job of the administrators of the National Mental Health Act and of all people who think of the future of psychiatric research to state clearly that at present the tasks of the various foundations supporting psychiatric and psychological research are: to endow institutions for psychiatric and psychologic research and to endow research professorships, and to secure the opportunity that professionals of attainment and reputation spend years away from their usual professional pursuit in institutions of research in psychiatry with traditions different from their own. It will be the job of all of us to indicate the limitations of a federally supported research and to point out that where these limitations start, as indicated above, there the role of the private foundations begin.

Coming to the research activities of the Menninger Foundation, we are faced with the very same problems that we encountered in the broader setting. Our greatest problem in this period was that even the sparse research personnel we had in this year was called upon to perform other duties to the detriment of research work. In spite of all this, due to teamwork and strenuous efforts, the major current research project, the Hypnosis Project, progressed and yielded results which have been described in five research publications; the major research project in preparation, the Infant Research Project, forged its way ahead and yielded some preliminary results embodied in eight different presentations. The major research project that was completed this year, the "Validation and Evaluation of Diagnostic Psychological Test Procedures" brought its final yield embodied in seven different publications, one of which was the monograph "Diagnostic Psychological Testing" published at midyear in an edition of 2000 sets which was exhausted by the end of the year. Preparations for reprinting were made. Several other minor research projects were carried out yielding results embodied in seven different research publications. Research projects in the selection of medical men and psychologists for training in psychiatry and clinical psychology have been initiated and assistance for them from the Veterans Administration has been assured.

The personnel shortage and the demand on the time of research personnel discussed in the general section thus exerted its detrimental effects very strongly on our research work. Our situation in this respect was so difficult that we had to return a grant which we had already obtained for a specific piece of work in the diagnosis and etiology of alcoholism, for the lack of personnel. The strenuous efforts we made to attract new research personnel were not very successful. There are means we can adopt to improve our situation and these will be soon pointed out. Yet we need general measures to be adopted by the whole psychiatric and psychological community as well as by the common consciousness of the public to assure continuity of research through available research personnel.

Efforts to obtain support for a general long-range research project in problems of infancy, though we had general support for the preliminary work, remained to this date unsuccessful. The situation is that while for specific circumscribed work grants are more easily available, for long-range general planning such support is difficult to obtain. Only the administrators of the National Mental Health Act will be in the position to give such grants. It is also very likely that in order to continue and enlarge the hypnosis research project, which as it progresses involves more and more the general problem of research in psychotherapy, we will have to approach the Administration of the National Mental Health Act. The progress of our research work leads away from specific, isolated projects and makes necessary financial support for very generally formulated projects. The hypnotherapy project leads to a broad research in therapy within the framework of which all kinds of therapies may be subjected to scrutiny and investigation, and within the framework of which the psychology of all types of adjuncts of therapy, e.g., hypnosis, drugs, etc., can be freely investigated.

In financing our research work we had also the difficulty that we have had to search for money for definite research projects or accept money that could be had for a certain research and had to search then for people to do it. These procedures are wasteful. We need finances to assure global

coverage of our research, allowing to bring in new research workers on their own terms without predefined projects, supporting them to develop their own research projects, with their tenure not tied to specific projects. This is the way our so far successful projects have been built up. Therefore, either we will obtain unearmarked reasearch funds directly given to our Foundation from private individuals or we must obtain grants financing research positions rather than research projects from various foundations without stipulation of the type of research to be done by the men we obtain to fill these positions.

We have been making extensive preparations in the course of this year for our future research program. The plans center around the problems we consider at present crucial for our field:

1) the research project on the application of hypnosis in modern psychotherapy is to be enlarged into a general exploration of various psychotherapeutic procedures and various adjuncts of psychotherapy.
2) A contribution toward the development of preventive psychiatry is to be made through exploration of the development of infants and small children and therefore our research in infancy which has been in preparation for the last two years has come more and more into the center of our attention.
3) Our diagnostic test tools need improvement and adding of the new standardized validated testing procedures. Therefore, we have set up plans to continue the work started with the project which brought forth the volumes on "Diagnostic Psychological Testing." These plans include explorations of perceptual processes for diagnostic purposes and explorations of thought organization in schizophrenia.
4) Definitive work in etiological classification of psychiatric disorders is one of the most urgent needs of psychiatric practice, training, and clinical research. We have made preparations to embark early on a large-scale nosological explorations to establish the actual form varieties of psychiatric illness take in our times. The plan of this investigation includes the follow-up and re-study of 3000 cases seen in this Institution in the course of the last ten years. The follow-up work which is one of the most sorely neglected procedures in psychiatric work all over the country will come in as an important aid in this exploration.
5) Selection principles for candidates for psychiatric training are urgently needed to expedite training, therefore we undertook such selection projects in collaboration with the Veterans Administration.

Thus, the five outstanding fields of exploration we are planning to embark on or to continue are: (a) evaluation of therapies, (b) contribution to preventive psychiatry by infant and small child studies, (c) development of more effective diagnostic testing tools, (d) general nosological, etiological exploration of psychiatric disease, (e) search for criteria: what makes a good psychiatrist and a good psychologist.

The field is wide open, in spite of the advancements of the last fifty years, little of all these problems has been settled definitely and it is our job to contribute directly with our research and indirectly with our influencing psychiatric, psychological and general public consciousness to the solution of these problems. Somehow it is hard to escape the impression that we are late and the time is flying; research is the fat of the land on which practice and teaching live—we must act vigorously to replenish this fat of the land.

THE TRAINING OF CLINICAL PSYCHOLOGISTS[1]

CHARLES A. ULLMANN

War Department, Washington, D. C.

THE preparation of clinical psychologists for professional employment has been the subject of much study during recent years. It is regrettable, therefore, that the title and introductory remarks of the article by Hutt and Milton (*3*) in the AMERICAN PSYCHOLOGIST of February 1947 should have carried the suggestion that the account which followed constituted a full record of the professional employment of clinical psychologists in the military service. And there is reasonable question regarding the wisdom of the suggestion contained in their concluding remarks which urged that the training of clinical psychologists be altered toward meeting situations such as presented by the Army medical program.

If we may accept Doll's (*2*) definition of clinical psychology as "the science and art of employing psychological principles, methods and procedures to promote the welfare of the individual person for purposes of optimum social adjustment and expression," clinical psychology was practiced in the Army by professionally trained workers as early as 1942, more than two and one-half years prior to the inception of the Surgeon General's program described by Hutt and Milton.

This earlier work followed the authorization (*6*) by the War Department on July 17, 1941, of the inauguration of special training units at replacement training centers for the "training of individuals who by reason of mental attitude or capacity, lack of ability to understand or speak the English language, inability to read and write, lack of common knowledge, or other deficiency, are not immediately suited to undertake the regular replacement training center course of instruction prescribed for trainees, or who during the regular course of instruction indicate that they require special attention." A correlative feature of this activity was to provide a basis for the return to civilian life of those who could not be made into useful soldiers within a reasonable period of time. Clinical psychologists were assigned to duty at training centers to implement the above program. In the early part of 1943, they were also assigned to replacement depots both in the continental United States and overseas, where they were able to control the further assignment of psychoneurotic casualties.

The survey made by Hutt and Milton of the trend of activities in the Medical Department during the one and one-half year period from September 1944 to April 1946 led them to emphasize the importance of personality testing and evaluation, of intensive supervised training in counseling and therapy, and of the opportunity for clinical research in the training of clinical psychologists who are called upon to work with neuropsychiatric patients.

While there is no intention of denying the desirability of experience in the above fields for clinical psychologists, the present writer does contend that the training of clinical psychologists should not be too heavily predicated on statistics derived from a job analysis of duties in a special situation. The evidence submitted by Hutt and Milton reflects the medical interest in and control of psychological services in the wartime program surveyed, and any inferences for the training of clinical psychologists are to that extent limited.

The duties performed by some clinical psychologists in the special training program of the Army offer useful hints regarding professional preparation which supplement the suggestions of Hutt and Milton. The trend noted by these authors toward the increased employment of clinical psychologists in individual therapy should not be allowed to obscure the fact that the objectives of clinical psychologists in working with individuals who presented various adjustment difficulties, were often accomplished through the administrative processes of planning, organizing, and controlling a training activity and the relation of individual soldiers to it. More

[1] The opinions expressed in this article are those of the author and are not set forth in his capacity as an employee of the War Department. Approval of the article or concurrence in the statements by the War Department is not to be implied.

specifically, this was done in special training units by developing principles and techniques for selecting trainees who might reasonably profit from such training; by selecting and instructing trainer personnel; by developing courses of instruction and controlling other factors, such as living arrangements; by devising training aids; by producing practical techniques for evaluating performance; by making suitable disposition of various individuals with limited possibilities of development; and by interpreting the possibilities and limitations of special training to staff officers and suggesting workable alternatives for problems outside the legitimate scope of the special training program.

On the basis of such experiences, the writer suggests that the services of clinical psychologists will be accorded substantially higher recognition in proportion to the degree to which, in addition to psychological insight, they demonstrate dependable administrative capabilities. When clinical psychology is practiced under medical auspices, however, the duties of psychologists are conceived primarily as an adjunct to psychiatric techniques in diagnosis and therapy. In this ancillary role, a less responsible level of performance is evidently expected, and the professional qualifications are adjusted to such a level of service.

An example of this is the program established recently by the War Department (*4*) for the appointment of officers to the Regular Army, under Public Law 670 (79th Congress), providing for the commissioning of personnel in the Medical, Dental and Veterinary Corps of the Medical Department in the grade of first lieutenant with less than three years actual or constructive service, and in the grade of captain with three or more but less than twelve years service. Officers of the Pharmacy Corps, to which clinical psychologists are currently assigned, are commissioned as second lieutenants with less than three years actual or constructive service and as first lieutenants with three or more but less than six years actual or constructive service. (Constructive service credit is based on the amount by which the age of the applicant on the date of appointment exceeds 25 years.) Under these conditions, it is not surprising to witness an exodus of qualified psychologists from the military service.

To-day "the loss of qualified psychiatrists and auxiliary personnel is such that it is rapidly becoming impossible for the Medical Department to carry out its mission in the care, treatment, and proper disposition of neuropsychiatric casualties and to give assistance and advice in the prevention of those casualties (*5*)." In the military neuropsychiatry training program recently established to meet this situation, the Medical Department has set up a 26-week course for training and designation as clinical psychologists personnel who satisfy the following requirements:

"Should have a Master's Degree in psychology with specialization in clinical, educational, or industrial psychology; or at least a college education with specialization in education, personnel administration, or educational or clinical psychology, or equivalent training and experience." Officers who are college graduates, possessing certain specified military occupational classifications but not possessing all specialized educational requirements, may apply for training.

Educational-vocational prerequisites for the thirteen-week course for enlisted clinical psychology assistants are civilian experience in educational, clinical, vocational, or industrial psychology, or two years of college with either present or potential qualification as Occupational Counselor, Classification Specialist, or Personnel Technician.

It is evident from the foregoing that the current and projected use of psychologists in medical installations of the Army is not such as to attract or retain many qualified persons in competition with opportunities for professional activity in civilian life. Qualified psychologists who accept the status tendered them in the Regular Army are bidding for the professional frustration described so poignantly by Chase (*1*) in the February issue of the AMERICAN PSYCHOLOGIST. Those concerned with the professional preparation of psychologists will therefore be inclined to question the extent to which the training of clinical psychologists should be influenced by the activities assigned or permitted clinicians in Army medical installations. It may be that clinical psychologists will attain full professional stature, both intrinsically and in relation to other professions, only if, in addition to developing insight into personality and competence in counseling and therapy, they acquire expertness in organization and management and develop and apply their administrative capacities.

REFERENCES

1. CHASE, WILTON P. Professional frustration in government psychologists. *Amer. Psychologist*, 1947, **2**, 73–75.
2. DOLL, EDGAR A. Quoted in Graduate internship training in psychology. *J. consult. Psychol.*, 1945, **9**, 243–266.
3. HUTT, MAX L. and MILTON, EMMETTE O. An analysis of duties performed by clinical psychologists in the Army. *Amer. Psychologist*, 1947, **2**, 52–56.
4. Appointment of Officers to the Regular Army. *Circular No. 289*, War Department, Washington, D. C., September 24, 1946.
5. Military Neuropsychiatry Training Program. *Circular No. 36*, War Department, Washington, D. C., February 7, 1947.
6. Mobilization Training Program (20-1) for Special Training Units at Replacement Training Centers, War Department, Washington, D. C., July 17, 1941.

(Continued from cover 2)

GEORGE ALLEN KRAMER
Main Dispensary
Naval Air Station
Norfolk, Virginia

JEANE ANN LEE
736 Fairmount St., N.W.
Washington, D. C.

JOHN PHILIP MADEIRA
TAG. Convalescent Hospital
Camp Lee, Virginia

M. J. MAYO
Teacher of Educ. Psychology
Harris Teachers College
St. Louis, Missouri

FRANCES JACOBSEN NORTON
Western Electric Company
Chicago, Illinois

MRS. ELEANOR B. PLAT
1518 Jonquil Terrace
Chicago 26, Illinois

DOROTHY RANSOM
1706 New Hampshire Ave., N.W.
Washington, D. C.

BERT A. ROENS
APO 4305
c/o Postmaster
San Francisco, Calif.

JEROME SCHIFFER
Dannall General Hospital
Danville, Kentucky

BERNARD C. SULLIVAN
MPEU #5 AAFTC #1
Miami Beach, Florida

WILLIAM M. WHEELER
1225 State Street
Santa Barbara, Calif.

STELLA H. WHITE (MRS. M. J.)
Graduate Student
University of North Carolina
Chapel Hill, North Carolina

JANE HUTCHINSON WINGO
907 South Wolcott
Chicago, Ill.

THE CONFERENCE ON GENETICS AND SOCIAL BEHAVIOR AT THE ROSCOE B. JACKSON MEMORIAL LABORATORY

J. P. SCOTT

Roscoe B. Jackson Memorial Laboratory

Bar Harbor, Maine

AS PART of the new program of psychobiological and sociobiological studies at the Roscoe B. Jackson Memorial Laboratory, a conference was held at Bar Harbor on September 10–13, 1946 on the subject of "Genetics and Social Behavior."

The general policy of the Division of Behavior Studies at the Jackson Laboratory is that its research should have some bearing on basic general theories of comparative sociology and social psychology, with the ultimate goal that these studies will be useful in solving human social problems. The members of the conference were therefore asked to advise the laboratory regarding the areas of research which appeared to be most important, most fruitful, and best adapted to the facilities of the Jackson Laboratory.

With Dr. Robert M. Yerkes as General Chairman of the conference, the members were organized into committees which reported on the following general subjects:

The Genetic Background of Behavior: Frank A. Beach, Clyde E. Keeler, George W. Woolley; W. L. Russell (Chairman)

Social Behavior and Motivation: David M. Levy, Nicholas E. Collias, Elizabeth A. Beeman; Gardner Murphy (Chairman)

Abnormal Behavior and Emotions: Halsey J. Bagg, Calvin S. Hall, John L. Fuller, Doris Twitchell-Allen; Howard S. Liddell and O. Hobart Mowrer (Chairmen)

Intelligence and Learning: Lloyd V. Searle, Walker M. Dawson, T. C. Schneirla, H. H. Strandskov; Calvin P. Stone and Neal E. Miller (Chairmen)

The Physiological Background of Behavior: E. W. Dempsey, W. C. Young, B. Ginsburg, E. M. Vicari, R. S. Morison, M. A. Kennard; C. T. Morgan and F. A. Beach (Chairmen)

Social Organization and Leadership: Nicholas Collias, J. P. Scott, Lois Barclay Murphy, Robert M. Yerkes; C. R. Carpenter (Chairman)

The conference members first examined the resources of the laboratory, including the many inbred strains of genetically pure mice which have so long been useful in cancer research as well as the newer facilities at Hamilton Station, where a behavior laboratory has been set up and where other genetic stocks of mammals, particularly dogs, are available.

The meetings resolved themselves into informal talks on the relationship of current experimental work to the laboratory and were later summarized as committee reports after much discussion. There was no pressure to bring in a unified report of which every one could give entire approval, since it was felt that this would probably handicap suggestions for new work.

The members of the committee on the Genetic Background of Social Behavior tended to emphasize the usefulness of animals which have controlled heredity, particularly pointing out the richness of material available in the Jackson Laboratory's stocks of inbred mice. They also emphasized the need for research on the pleiotropic effects of genes which may affect behavior.

In the discussion of Social Behavior and Motivation there was a tendency to remind the members of the many unsolved problems relating to aggressive and defensive fighting. It was also suggested that the theory of interaction between various types of motivation and emotional factors was a very important one; and that the genetic theory of factors which interact, rather than producing simple addi-

tive effects is also important in psychology. The need for the study of the emotion of fear was brought out in the discussion of abnormal behavior, and it was further suggested that emotions could be related to learning theory by considering unpleasant emotions as problems which had to be solved and which might lead to neurotic behavior if not solved properly. In this as in several other committee sessions, attention was called to the need for research in border-line areas between human and animal societies. Specific questions were raised regarding animal language and animal culture. Clear answers to these problems would make possible much better comparisons between animal and human data. It was also suggested that the techniques for producing experimental neuroses could be applied to the genetic material available at the Jackson Laboratory with an idea of finding out whether or not there were genetic differences in nervous stability.

It was strongly argued that other factors than basic ability may lead to differences in learning and intelligence tests, that differences in emotions and motivation are particularly important, as well as differences in responsiveness to stimulus cues. This problem needs additional investigation in both animal and human subjects.

The committee on the Physiological Background of Behavior discussed the possibility that differences in end-organ responses to hormones might be the basis for genetic differences in certain types of social behavior, particularly sexual behavior and the care of the young. The committee also suggested that the time was probably ripe for an analysis of behavior differences in terms of the chemistry of the enzyme systems of nervous tissues.

Meeting on the last day, the committee on Social Organization and Leadership stressed the importance of considering any behavior trait in relation to the animal society as a whole, and it was pointed out that there was a great need for the study of social behavior on the levels of the group and the whole society, as well as with individuals. To this end field studies as well as laboratory studies are invaluable. The problem of leadership and social control is an especially important one from the point of view of practical application of scientific discoveries in the social sciences. There was again an emphasis on the study of aggressive versus cooperative tendencies in societies.

Outside the regular program of the conference C. R. Carpenter discussed the problem of re-education in Germany; H. S. Liddell and others discussed the problem of studying emotional and neurotic behavior in free situations; and a special committee of science writers reported on the best methods for making scientific research socially effective.

The conference was run along somewhat unusual lines, which may have had something to do with its success. The members were limited in number and selected to represent one common interest and many different points of view. The conference was held in the same building in which the members ate and slept, which meant that they could be in constant contact with each other. Perhaps most important was the feature of asking the members not to prepare formal papers in advance of the conference. This meant that the committee members had to consult each other and make their talks and discussions conform to the audience and purpose of the conference. The result was that all programs were attended almost unanimously, and heard with great interest. The conference was particularly successful in arousing enthusiasm for work, both at the Jackson Laboratory and by the visiting members elsewhere.

Considered as a whole, the reports give innumerable valuable research suggestions, and lay the groundwork for cooperative effort, both between the Jackson Laboratory and other institutions, and between the laboratory and private summer investigators. A complete report of the conference proceedings will be published separately.

Comment

REPLY TO "PROFESSIONAL FRUSTRATION IN GOVERNMENT PSYCHOLOGISTS"[1]

With the government's peacetime need for trained psychologists at an all-time high and with the prestige of government science already at a low, it is necessary that criticisms of government service be phrased more precisely if we are to avoid wholesale damage to important areas of professional psychology. Dr. Chase has stated in a recent article, THIS JOURNAL, 1947, **2**, 73–75, that government psychologists are "plagued by the condition of 'professional frustration'" resulting from attempts to realize professional values which are in conflict with those of government administrators. Though a careful reading of the article will show that Dr. Chase was referring only to the fields of clinical and personnel psychology, his conclusions were so general that one might well have received the impression that *all* government psychologists were equally thwarted. Such is not the case, and it is unfortunate that the all-inclusive title and the sweeping conclusions could not have been expurgated of their generalities before publication.

An example of one group of government psychologists who have not experienced professional frustration is furnished by the experimental psychologists at the Naval Research Laboratory. Either due to the fact that their work is carried out in a laboratory or because of the different field of psychology involved, the causes of frustration mentioned as being wide-spread in government do not arise at NRL. Here, psychologists are treated not as *technicians* but as *scientists*. They occupy positions identical with those held by physicists, chemists, and research engineers. Furthermore, their scientific judgments are accepted without question by the agencies within the Navy.

Dr. Chase has stated that it is necessary to compromise one's professional values in government psychology. This is not true at NRL. At this laboratory, psychological research programs are conceived by psychologists, executed by psychologists, and reported by psychologists. There is no administrative interference whatsoever with any phase of research. Every psychologist in the laboratory stands professionally upon his own feet. He is free to conduct his research in whatever way he sees fit. It is not necessary that he work through administrators or around administrators in carrying out his program. He must succeed or fail on his own.

There are, no doubt, many other government psychologists who, like myself, do not share with Dr. Chase his belief in the universal necessity of professional frustration within the government. It is hoped that they will also make their positions clear in order to help correct the false impressions created by Dr. Chase's article.

FRANKLIN V. TAYLOR
Psychology Section, Radio Division III
Naval Research Laboratory

[1] "The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large".

PSYCHOLOGISTS' OPINIONS VS. THEIR SENSE OF EVIDENCE

Anne Anastasi (THIS JOURNAL, 1947, **2**, 57–62) tells what 56 psychologists think about the importance of the undergraduate laboratory course in general experimental psychology, especially as training for clinical psychologists. There is expressed a fairly general belief that even clinical psychologists should understand scientific method and should learn to think in terms of concrete evidence. For this reason her article impresses me because it shows how these psychologists who want their students trained in experimental method fail in their replies to get away from the *dicta* of the expert who feels assured that his authority is valid. They have their opinions, but they present very little evidence and no one of them mentions *controls*. (Doubtless I am here criticizing my own report to Anastasi.)

I count twelve important statements of opinion, unsupported except by the authority of the speaker. "We believe the requirement of one semester of experimental psychology is essential . . ." "My own

personal reaction is . . . " "I think there is a certain psychological sophistication that comes from . . . " "I should not like to see . . . " "My personal feeling is very definitely that . . . . "

There are four bits of evidence given. Three of these (p. 61) state that, in the recent emergency, men trained in experimental psychology rapidly acquired skill in clinical psychology. The other item (p. 60) is that one respondent can, in advanced courses, separate the papers of the students who have had training in experimental psychology from the other papers.

Perhaps the expert is to be trusted in these matters, even if he does not rely on evidence to show the superiority of those persons who are trained to rely on evidence, but I do not feel sure. There is so much stereotypy and cant in the consideration of these problems of transfer of training. I should like to see some controls first, and then, if there is a demonstrable difference, get evidence to show whether the difference is due to courses taken and passed, or to the motivational and intellectual differences that lead some people to choose science, when they have a choice, and other people to omit it.

EDWIN G. BORING
Harvard University

MORE EFFECTIVE USE OF MACHINE SCORED EXAMINATIONS

With soaring enrollments in introductory courses in psychology, many departments have begun to use machine scored examinations to free staff members from routine paper scoring. The system in common use is made available by the International Business Machines Company, and furnishes a printed answer sheet which can be used in conjunction with a mimeographed set of questions. The answer sheets are designed to be flexible so that either true-false or multiple choice examinations may be used. The student indicates his choice of answer by making a mark with a special pencil.

The scoring machine provides a rapid and accurate score—either items correct, items wrong, or both. Some instructors have encountered difficulty in discussing examinations with their classes when the papers are returned to the students because the machine makes no marks on the paper—it in no way indicates which items are correct and which are in error. For the teacher who uses examinations as a pedagogical as well as a measuring device, this constitutes a genuine block to the use of this time saving machine.

Psychologists at the University of Wisconsin have devised a method which eliminates this disadvantage and increases the usefulness of machine scored examinations. After the machine scoring is completed, the papers are accurately stacked, and the key is placed on the top of the pile. The stack of papers is then firmly clamped to a soft wooden board by means of C clamps. A hole is then drilled through each correct answer on the key sheet, through all of the papers to the wooden block beneath using a $\frac{1}{16}$ inch twist drill in a drill press. It has been discovered that the best result will be obtained when the drill press is set to operate at moderately high speed to produce clean holes without tearing the paper. Drilling five hundred answer sheets for a hundred item examination takes only about seven minutes.

The result of the drilling operation is that each student is provided with an accurate copy of the key, and can observe his errors readily—each blackened area that does not have a hole drilled through represents an error.

RAYMOND C. BICE
University of Wisconsin

Across the Secretary's Desk

APRIL IS A MONTH OF MEETINGS

April is a month of meetings for psychologists. During April the Southern, Southwestern, and Eastern Psychological Associations held their annual meetings. The Division of Anthropology and Psychology of the National Research Council met. So did the APA's Board of Editors and Policy and Planning Board. Just barely outside the month, the Midwestern Psychological Association held its annual meeting and the APA Board of Directors held the winter meeting called for by the new constitution.

The meetings of the three APA Boards—Directors, Editors, and Policy and Planning—provided an opportunity for much APA work. The formal reports of these Boards will appear in later issues of the AMERICAN PSYCHOLOGIST. Here are some of the highlights.

The Board of Directors was the first to meet. For three days, from March 28 through March 30, its members lived and worked at the Michigan Union Building at the University of Michigan. All members were present. They are pictured around the conference table in the accompanying photograph.

The largest single item of business was considering 580 applicants for Associate membership. This is the first year that new Associates have been elected at any time other than the annual meeting of the Association. This change was made for two reasons. The number of applicants has grown so great that it took up too much of the Board's time in September, when many other matters had to be prepared by the Board for action at the annual meeting of the Council of Representatives. Consequently, last September, the Council delegated responsibility for electing new Associates to the Board of Directors.

The second reason grew out of the new divisional structure of the APA. When new applicants are considered both by the APA and by the divisions at the September meeting, confusion is bound to arise over whether an applicant has been approved both by the APA and by the division of his choice. Moving APA election to the winter allows the applicant to join APA and then to apply to a division. In September the divisions can act upon the applications without wondering whether the applicant is going to be admitted to the APA.

The Board of Directors gave a good deal of attention to the problems of training clinical psychologists. This has been a matter of importance to the APA and AAAP for some years; the current program of the Veterans Administration and the prospective program of the United States Public Health Service have increased its importance. Various aspects of the problem have been considered in past years by the Division of Clinical and Abnormal Psychology and the APA Committee on Graduate and Professional Training, Committee on Clinical Psychology, Committee on Standards for Psychological Service Centers, and Committee of University Department Chairmen. In order to coordinate the work of these groups, the Board created a new Committee on the Training of Clinical Psychologists. David Shakow was named chairman. The other members will be named after consultation with the Division of Clinical and Abnormal Psychology. The Board requested the new committee to prepare a fairly detailed description of an ideal curriculum for the graduate training of clinical psychologists, and to have that curriculum ready for consideration next September. The new committee's second responsibility is to refine the list of institutions approved for graduate training in clinical psychology. The list will be published by the Committee on Graduate and Professional Training in the June AMERICAN PSYCHOLOGIST.

With an increased number of psychologists hanging out their shingles as practicing psychologists, the question of ethical standards is coming up more and more frequently. The APA has never had a generally accepted code of ethical practices. In order to start consideration of what should go into such a code, the Board authorized the appointment of a Committee on Ethical Standards for Psychology. Nominations for the committee have been received from the divisions, but the members have not yet been named. The committee's goal is to draft a code of ethics, but that goal will probably not be reached for several years. The problem is too complex to solve hastily. Only careful consideration by many groups over a period of some time can provide background for developing a fair and workable code.

BOARD OF DIRECTORS AND OFFICERS
AMERICAN PSYCHOLOGICAL ASSOCIATION

Reading left to right: CARL R. ROGERS, *President*; JOHN F. DASHIELL; LAURANCE F. SHAFFER; WILLIAM A. HUNT; the late WILLARD L. VALENTINE, *Treasurer*; HELEN PEAK, *Recording Secretary*; DONALD G. MARQUIS, *President-elect*; CLARENCE H. GRAHAM; EDWARD C. TOLMAN, and RICHARD M. ELLIOT

The first resonsibility of the new committee is to see that these background discussions get started.

Much of the Board of Director's time was given to the selection of persons for nomination as members of various APA committees or as representatives to other organizations. These recommendations will be given to the Council of Representatives this summer.

The Board of Editors met on April 11 at the Hotel Pennsylvania in New York City. Reports were received from each journal editor for the year 1946. The most important matter of general policy considered was the question of whether APA journals should give early publication to articles when the author is willing to pay all the costs. This has been done in some of the journals.

Opponents of the procedure claim that it gives an unfair advantage to the person with money since it allows him to buy early publication. His poorer colleague has to wait for his article to appear in its normal turn.

Defenders of the procedure claim two advantages for it in addition to any advantage the author gets from having his article appear earlier than it normally would. First, it increases the amount of material that the subscriber gets. These articles are not included in the number of pages normally included in each volume; they are extra pages. Second, it decreases the lag in publication for all articles received later, since it gets some articles published without using up any of the journal's normal quota of pages.

Last September a joint meeting of the Board of Editors and the Committee on Publications debated whether this policy should be continued or dropped. It has since been considered by the Committee on Publications and the Board of Editors separately. No final agreement has been reached. Some members of both groups still favor the policy; others oppose it. The Council of Representatives will be asked next September to decide the question as a matter of general APA policy.

The Policy and Planning Board met April 12–15 at Totowa, New Jersey, where Superintendent A. H. Meese of the North Jersey Training School generously provided a meeting room and quarters for the members of the Board. All members were present for the entire four days: E. R. Hilgard, *Chairman*, Marion Bills, *Secretary*, Clarence Graham, Donald G. Marquis, Robert R. Sears, Laurance F. Shaffer, David Shakow, Ruth Tolman, and Lloyd N. Yepsen.

Since the Policy and Planning Board does not have to worry about administrative detail, it is free to devote its time to considering in larger perspective what is good for psychology. This year's meeting was concerned with the question, "Who is a psychologist?" Most of the four days of discussion centered around attempts to answer that question from the standpoints of certification of psychologists, accreditation of training institutions, establishment of APA membership requirements, establishment of Civil Service employment requirements, selection of titles to designate psychologists in military service, and kindred problems of standards. It was generally agreed that the number of different levels of psychologists should be as few as possible and as uniform as possible. Out of this general policy there grew a number of specific recommendations. A uniform standard for certification of psychologists by states was recommended. A change in the minimum requirements for election as a Fellow of the APA was recommended so that they would be the same as the minimum for certification required by the American Board of Examiners in Professional Psychology. The Board is recommending that by 1950 the minimum requirements for election as an Associate member of the APA be raised to holding a PhD in psychology. Such a change would not affect the status of the present Associates. This change would make Associate membership requirements agree with the recommended requirements for state certification and with the minimum for employment at professional levels (P-4 and higher) being adopted by a number of government agencies.

Since some of these changes would require amending the present By-Laws, they cannot go into effect until after they are approved by the Council of Representatives and voted upon by the members. All APA members will have to consider these changes. As background for that consideration, they should read the report of the Policy and Planning Board's discussion. It will appear in the June issue of the AMERICAN PSYCHOLOGIST.

All three board meetings were work sessions. The Board of Directors and the Policy and Planning Board met morning, afternoon, and night. Between formal sessions, discussions went on, and reports were read, written, corrected, and criticized. The rapid expansion of opportunities and responsibilities for psychologists and the rapid growth of the Association make much work for the officers and require careful planning for the future. DAEL WOLFLE

Psychological Notes and News

WILLARD L. VALENTINE died April 5, 1947 of a sudden heart attack. He was 42 years old. He obtained the Ph.D. from Ohio State University in 1929. After serving on the faculty of Ohio State University, he became chairman of the department of psychology at Northwestern University in 1940. In 1937 he was appointed treasurer of the American Psychological Association. He served for many years as business manager of APA publications. At the time of his death he was the editor of *Science* and treasurer of the American Psychological Association.

WILLIAM MASON DANNER, JR. died December 20, 1946 at the age of 57 years.

P. RANSCHBURG, long a cooperating editor of *Psychological Abstracts*, died during the siege of Budapest in January 1945.

The 1946–1947 Yearbook of the American Psychological Association has been mailed to all members. Copies of the Yearbook may be obtained by sending 50 cents in stamps to the Office of the Executive Secretary.

By action of the Board of Directors, the 1946–1947 Yearbook is an address book. The addresses given are those supplied by the members as of September 20, 1946 for the mailing of their journals and other materials from APA. Associates elected at the September 1946 meeting are not included.

The 1948 Yearbook will contain biographical entries of all members similar to those appearing in *American Men of Science*. The entries will contain educational records and professional experience. Divisional affiliation will be given in those cases where divisions have completed their membership lists.

The American Board of Examiners in Professional Psychology, which was approved last year by the APA, formally came into existence on April 23 when it was incorporated in the District of Columbia as a non-profit corporation. Since District of Columbia laws require at least two of the three incorporators to be residents, WALTER V. BINGHAM, JOHN G. JENKINS, and DAEL WOLFLE served. The incorporators then held a meeting at which MARION A. BILLS, JOHN G. DARLEY, CARLYLE JACOBSEN, JOHN G. JENKINS, GEORGE A. KELLY, DAVID SHAKOW, CARROLL L. SHARTLE, DAVID WECHSLER, and F. L. WELLS were elected as Trustees. The Trustees met in Chicago on May 3 to elect permanent officers and to initiate the Board's program of examining and certifying psychologists engaged in clinical, industrial, and counseling work.

HENRY N. PETERS, who was formerly connected with the Psychological Clinic, University of Hawaii, has joined the staff of the department of psychology of the University of Arkansas as an associate professor.

DAVID KRECH of Swarthmore College has accepted an appointment as associate professor of psychology at the University of California, Berkeley, beginning in the academic year 1947–1948.

C. ROBERT PACE has been appointed assistant to the president in charge of educational research and evaluation at American University. He had been with the Bureau of Naval Personnel for three and one half years, first as Head of the Research Unit in Standards and Curriculum Division, and later as Head of the Field Research Section, Research Activity.

ROSS A. MCFARLAND, Division of Research of the Graduate School of Business Administration, Harvard University, has been made a member of the Committee on Operating Problems of the National Advisory Committee for Aeronautics.

CALVIN P. STONE of Stanford University, FRANK GELDARD of the University of Virginia, DONALD GLAD of San Jose College, and JAMES EGAN of Harvard University will be visiting lecturers in the summer sessions at the University of Wisconsin.

CHARLES H. GRIFFITS, professor of psychology at the University of Michigan, has been granted a sab-

batical leave of absence for the second semester of the academic year 1946–1947.

The department of psychology of the University of California at Los Angeles has invited the following psychologists to offer courses in their specialties during the two summer sessions this year: FREDERICK B. DAVIS, M. BRUCE FISHER, WARD C. HALSTEAD, OSCAR J. KAPLAN, T. W. RICHARDS, CARL R. ROGERS, ANTHONY J. SMITH, G. R. WENDT, STANLEY B. WILLIAMS, and PAUL T. YOUNG.

The following is a list of the clinical psychology trainees now enrolled at the 22 universities cooperating in the VA training program in clinical psychology:

1. *University of California at Berkeley*
ROGER E. BARDSLEY
JOHN N. CAMPION
LEWIS G. CARPENTER
WILLIAM COOK
ALLAN T. DITTMANN
BEN C. FINNEY
JEROME FISHER
MERVIN FREEDMAN
TIMOTHY I. LEARY
MARTIN S. LEVINE
HERBERT NABOISEK
ABEL G. OSSORIO
JAMES O. PALMER
ROSEMARY PETERS
ALEX ROSEN
PATRICK LEE SULLIVAN
TRENTON W. WANN
EVAN LEE WOLFE
2. *University of California at Los Angeles*
GLEN A. BRACKBILL
CHARLES W. CABEEN
NORMAN L. FARBEROW
JOSEPH L. LAURIA
WALLACE V. LOCKWOOD
JOSEPH LUFT
ELMORE A. MARTIN
DONALD B. PETERS
CHARLYNE T. STORMENT
WILLIAM M. WHEELER
WAYNE W. WISHAM
3. *University of Chicago*
EMMETT EARL BAUGHMAN
BENJAMIN BRODY
JOSEPH G. DAWSON
ALAN L. GREY
ALBERT L. HUNSICKER
VICTOR A. JACKSON
BENJAMIN A. JOSHEL
JOHN S. KAFKA
SEYMOUR L. LUSTMAN
ROBERT LEO MCFARLAND
HAROLD H. MOSAK
MAX M. NISSENSON
DAVID PEARL
RODERICK W. PUGH
ROBERT D. QUINN
NATHANIEL J. RASKIN
WILLIAM T. RAYMOND
SAUL M. SIEGEL
4. *Columbia University*
ALEX BRAIMAN
ALBERT V. FREEMAN
GORDON A. LOGAN
JOHN G. MARTIRE
MELVIN B. SWARTZ
5. *Duke University*
AUDREY A. FOOR
HIRAM L. GORDON
WILLIAM C. HALLOW
BEVERLY C. MOSS
MORRIS ROSEMAN
HARLEY A. SCOTT
6. *Fordham University*
MARTIN J. BRENNAN
CHARLES A. DEVINE
FRANCIS M. GILHOOLY
EDWARD J. MCCLOSKEY
EDWARD J. MCLAUGHLIN
FRANK S. PUZZO
FREDERICK SCHILLER
JOSEPH J. SILVA
JOHN M. STANTON
JOSEPH J. VACCARO
JOSEPH R. ZUTELL
7. *University of Illinois*
CHARLES J. BELLAVIA
JOSEPH J. DE LUCIA
ERIC DREIKURS
ANTHONY R. HYBL
KENNETH C. JOST
DALE C. LARSON
WILLIAM C. MCBRIDE
ALLEN S. PENMAN
GEORGE R. PRENTICE
NATHAN ROSENBERG
8. *State University of Iowa*
KENNETH B. BROWN
ROBERT EICHLER
R. S. REDMOUNT
L. I. SCHNEIDER
9. *University of Kansas (Menninger Foundation)*
WILLIAM H. BROWN
JOHN T. DICKSON
G. A. EHRENREICH
VIVIAN D. FLEMING
NATHAN GREENBAUM
IRENE HOLLINGSWORTH
PHILIP S. HOLZMAN
MILTON J. HOROWITZ
EUGENE S. JONES
ARTHUR D. KOBLER
HARRY LEVINSON
H. L. MANNING, JR.
HELEN K. MOORE
VERLYN L. NORRIS
C. E. PRINCE
H. J. SCHLESINGER
LEATRICE STYRT
GEORGE H. WEBER
10. *University of Kentucky*
RAYMOND DURHAM
J. HARRY FEAMSTER
WILLIAM E. HARRIS
JOHN K. KEW
JOE LAWSON, JR.
HARVEY LEECH
CHAMP LIGON
ASHLEY ST. J. MIXSON
RICHARD OWSLEY
BARRY SHAW
11. *University of Michigan*
STEWART G. ARMITAGE
ROBERT P. BARRELL
CHARLES A. DAILEY
GERALD HOVER
ROBERT G. JENSEN
JULIAN LASKY
EDWARD V. MALCOLM
KARL E. POTTHARST
EGAN A. RINGWALL
HENRY SAMUELS
RICHARD SANDERS
DAVID E. SHEER
JAMES S. SIMKIN
CLEMENT M. THOMPSON
BENJAMIN W. WHITE
WILBUR A. WILLIAMS
12. *University of Minnesota*
ALBERT L. ANDERSEN
ISADORE ARSHACK
FRANCIS X. BARRON
GEORGE S. WELSH
13. *New York University*
NORMAN BERK
LEONARD BERKOWITZ
HERBERT FENSTERHEIM
SEYMOUR GAIBER
LEONARD HORWITZ
ALEXANDER JASNOW
BERNARD KALINKOWITZ
MURRAY KRIM
GEORGE T. KYLE
SIDNEY LEVY
SAMUEL J. PRENSKY
LOUIS M. ROSENBERG
JOSEPH SACKS
STANLEY SCHWARTZ
HERBERT TURKEL
14. *Ohio State University*
GEORGE R. BAKER
JOHN R. BARRY
RODGER C. BISHTON
DAVID D. BLYTH
RANDOLPH O. BORING
VAUGHN JACK CRANDALL
ERWIN A. LOTSOF
LAURENCE S. MCGAUGHRAN
ROBERT B. MORTON
HAROLD RUBIN
15. *Pennsylvania State College*
MANUEL ARONSON
HAROLD M. CORTER
DOUGLAS A. DEAN
JOHN M. RAKUSIN
16. *University of Pennsylvania*
ROBERT F. FERGUSON
JOSEPH S. HERRINGTON
ISADORE KRASNO
BENJAMIN F. MCNEAL
JULIAN MELTZOFF
JEROME L. SINGER
MARTIN SINGER
DON L. WINFIELD
JOHN F. WINNE
17. *University of Pittsburgh*
GEORGE ALBEE
GEORGE E. COPPLE
S. THOMAS CUMMINGS
WILLIAM KOGAN

WILLIAM PICKERING
GLENN W. RIEMAN
ROBERT E. ROYAL
FREDERIC A. STONESIFER

18. *University of Southern California*
CHARLES A. BARNES
JOSEPH CARL COLE
ALFRED S. FRIEDMAN
PHILLIP A. GOODWIN
JACK F. LITTLE
SIDNEY D. PRINCE
MAURICE RAPKIN
DAVID H. RUJA
EDWIN S. SHNEIDMAN
BARBARA McM. STEWART
GIDEON B. STONE

19. *Stanford University*
GERALD P. BLUM
ABRAHAM CARP
EDWARD R. CARR
WILLIAM AVERY CASS
CHARLES W. ERICKSEN
JAMES D. GRANT
RICHARD C. HAMISTER
LOUIS S. LEVINE
HAROLD L. RAUSH
JOHN R. SCHOLSSER
CLARENCE L. WINDER

20. *Tulane University*
MALCOLM D. ARNOULT
MELVIN R. MARKS
ALLYN F. M. MUNGER
EUGENIE C. SARRE

21. *University of Wisconsin*
JACK BLOCK
LEONARD D. ERON
WILLIAM F. FEY
STANLEY ROSENMAN

22. *Yale University*
JOHN CONGER
FRANCIS MORIARTY
PAUL MUSSEN
PATRICIA PITTLUCK

MILTON H. ERICKSON delivered a lecture on the Psychodynamics of Human Behavior at the University of Western Ontario on March 12.

Of interest to American psychologists is the formation of a Committee of Professional Psychologists (Mental Health) under the auspices of the British Psychological Society. This committee was organized to speak for psychologists on professional matters, and represents all psychologists in England, Wales, and Scotland engaged in the field of mental health.

The Committee has formulated a training scheme for workers in the field of mental health which includes the following provisions:

1. That the training for psychologists in the field of Mental Health in Childhood shall last for one year.

2. That candidates for training should not as a rule be accepted below the age of 25 years, and that they must have had a minimum of three years teaching experience or other acceptable experience with children.

3. A statement of the specific courses that the training should include.

4. That when circumstances permit, some statement or award, its form as yet unspecified, be made on the successful completion of training. At present the committee is taking part in the formulation of a salary scale for its members.

The requirements for membership on the committee are membership in the British Psychological Society, an Honors Degree in Psychology or its equivalent, and the successful completion of a full training course at a training center recognized by the Executive Committee or qualifications considered equivalent.

The committee feels that their work has been valuable so far in that they have been able to insist on training as a prerequisite for entry into the field.

The first issue of a new quarterly, *Human Relations*, announced jointly by the Tavistock Institute of Human Relations, London and the Research Center for Group Dynamics, Massachusetts Institute of Technology, appeared in April. The editorial committee consists of ELLIOT JAQUES, JOHN RICKMAN, J. D. SUTHERLAND, ERIC L. TRIST, and A. T. M. WILSON for the Tavistock Institute of Human Relations, and DORWIN CARTWRIGHT, LEON FESTINGER, RONALD LIPPITT and MARIAN RADKE for the Research Center for Group Dynamics. THOMAS S. FAIRLEY is managing editor.

Human Relations has been organized to serve as a channel in which work in the various social sciences may converge for comparative study at an international level. It is planned to supplement more specialized journals by providing side-by-side comparison of related work in sociology, psychology, economics, anthropology, and psychiatry.

Inquiries should be addressed to *Human Relations*, Research Center for Group Dynamics, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

A new journal, the *British Journal of Statistical Psychology*, is being started. GODFREY THOMSON of the University of Edinburgh and CYRIL BURT of the University of London are the joint editors.

A new journal, the *International Journal of Opinion and Attitude Research*, is being published. The purpose of this journal is to provide a forum in which specialists of all countries can present and discuss the problems in opinion and attitude research. It is hoped that within a short time the scope of the journal will include all the countries where such research is being carried on. LASZLO RADVANYI, the editor, will appreciate any suggestions and advice which those doing research in this field may give

him. All communications should be addressed to Dr. Laszlo Radvanyi, Donato Guerra 1, Desp. 207, Mexico, D. F., Mexico.

International Universities Press announces the publication of *The Yearbook of Psychoanalysis*, Volume II, 1946. SANDOR LORAND is managing editor and the editorial board consists of HENRY A. BUNKER, ERNEST JONES, BERTRAM D. LEWIN, and C. P. OBERNDORF.

ROBERT S. DANIEL is teaching a graduate seminar at the University of Missouri on Professional Problems in Psychology. The principal topics in the course are: where to find material on psychological topics; how to prepare research material for publication; psychological careers and advancement; research facilities; and the psychologist's relation to his colleagues. The text for this course is the *Handbook of Psychological Literature*, by Louttit, supplemented by relevant journal articles and books.

Dr. Daniel has found that there are many techniques that experienced psychologists take for granted that are wholly new to even good graduate students. Although there is little in the course that the students would not eventually learn otherwise, the information is often obtained in a haphazard manner and much too late to facilitate graduate work.

Pi Lambda Theta, the National Association for Women in Education, announces that two awards of $400 each will be granted this year for research on any aspect of the professional problems and contributions of women in education or another field. Three copies of the final report should be submitted to the Chairman of the Committee on Studies and Awards, Bess Goodykoontz, U. S. Office of Education, Washington 25, D. C. before July 1. ALICE I. BRYAN and EDWIN G. BORING won one of the 1946 awards for their paper *Women in American Psychology: Factors Affecting Their Professional Careers*. A condensed version of this article appeared in the January issue of THIS JOURNAL.

The committee on the Barbara Burks Memorial Fund has decided to apply the fund to the completion of her research on identical twins reared apart. ANNE ROE has agreed to undertake the assignment of completing the study. An advisory committee for the project consists of ROBERT S. WOODWORTH, KATHERINE BREHME, and LEWIS TERMAN.

The sixth Purdue Industrial Personnel Testing Institute was held on April 21 to May 2. The course, open to industrial personnel men and employment managers, deals with the field of personnel testing. JOSEPH TIFFIN, C. H. LAWSHE, S. EDGAR WIRT, N. C. KEPHART, E. J. ASHER, A. C. ECKERMAN, and RICHARD FEINBERG made up the Institute staff.

The Colorado Psychological Association completed its formal organization with the adoption of a constitution and the election of officers. A. H. HILDEN is president; C. E. MEYERS, vice-president; R. W. SHAW, secretary-treasurer; and T. H. CUTLER and L. C. DOUGLASS, members-at-large of the Executive Committee.

On May 16, 1947 at the University of Washington, Seattle, there will be a meeting of psychologists to begin proceedings for a Washington State Psychological Association. Further information may be obtained by writing Dr. Edward S. Bordin, Student Counseling Center, State College of Washington, Pullman.

The Society of Experimental Psychologists met at Princeton University on April 9th and 10th. A symposium was held on heredity and environment with HERBERT S. LANGFELD presiding. At a dinner on April 9th WOLFGANG KÖHLER was awarded the Howard Crosby Warren Medal and Award for his studies on figural after effects as an approach to a more general theory of perceptual processes.

A conference on the experimental analysis of behavior will be held at Indiana University from June 16 to June 22. Further information may be obtained by writing to Dr. B. F. Skinner, Department of Psychology, Indiana University, Bloomington.

At the annual meeting of the Conference of State Directors and Supervisors of Special Education held at Atlantic City, March 3, a formal resolution was made to thank J. E. WALLACE WALLIN for his "in-

spiring leadership and guidance of the conference since its inception."

A guidance conference on the measurement of student adjustment and achievement conducted by the Bureau of Psychological Services will be held at Ann Arbor on June 26 and 27 under the auspices of the University of Michigan Institute for Human Adjustment. Interested persons are invited to write to Dr. Wilma T. Donahue, Bureau of Psychological Services, 1027 East Huron Street, Ann Arbor, Michigan.

The National Conference on the Blind Preschool Child was held from March 13 to 15 in New York City. On the first day the program dealt with the social work aspects, on the second with the educational aspects, and on the third with the medical aspects. The conference was arranged by Dr. Berthold Lowenfeld.

The Metropolitan New York Association of Applied Psychologists held a dinner meeting on April 1 at the Hotel Duane. The topic of discussion for the program was vocational advice for graduate students in psychology. Representatives of different aspects of psychology discussed what graduate students should do to prepare themselves to enter a specific branch of applied psychology.

The meeting of the Association of Midwestern College Psychiatrists and Clinical Psychologists was held at Ann Arbor on April 18 and 19. FRED MCKINNEY is the president of this organization and WILLIAM M. GILBERT is the secretary-treasurer.

The National Council on Rehabiliation announces that *Rehabilitation of the Handicapped, A Bibliography, 1940–1946*, will soon go to press. It includes about 5,000 titles from publications dated January 1940 through December 1946. Information may be obtained from the National Council on Rehabilitation, 1790 Broadway, New York 19, New York.

A bill has been introduced into the House of Representatives to appropriate 12 million dollars to assist all the states and territories in extending and improving their health services for school children. The money is to be spent in the development of services for the prevention, diagnosis, and treatment of physical and mental defects. The long range objective of this National School Health Service bill is to assure that no American child grows up with physical or mental defects that could be prevented or corrected in childhood.

The Survey Research Center of the University of Michigan announces internships and assistantships for the academic year 1947–1948. The Survey Research Center has been established to perform five major functions: provide a well-trained staff for conducting surveys on economic and social problems; provide graduate training in all phases of survey methodology; conduct methodological research to improve and develop survey procedures; help integrate the social sciences by providing facilities for research on interdisciplinary problems; and foster basic theoretical advances in the social sciences based on new data from inter-disciplinary research.

Appointments will be available at all levels of experience from advanced undergraduate assistantships to post-doctoral internships. Stipends for half-time positions for graduate students will begin at $1000 per annum. Those for full time post-doctoral internships will begin at $3000 per annum. Applications for the academic year 1947–1948 must be received before August 1, 1947. In making applications a full statement of academic record, including five references, should be sent to Dr. Rensis Likert, Director, Survey Research Center, University of Michigan, Ann Arbor.

The department of psychology of the Merrill-Palmer School is offering two fellowships for the coming year. One is a junior fellowship leading to the MA. The stipend will be $345 with free tuition. The other is a senior fellowship for a student with an MA and knowledge of some of the fundamentals of clinical practice. The stipend is $1000 for ten months, with possible arrangements for maintenance. Interested persons should write to Dr. W. Mason Mathews, Psychology Department, Merrill-Palmer School, 71 Ferry Avenue, Detroit 2, Michigan.

The research project on the selection of clinical psychologists is planning an eight-week program for the study of applicants for VA training positions in clinical psychology. There will be an opportunity for a few psychologists who have recently received their doctorate or are within one year of it to partici-

pate in this assessment program. Board and room will be provided. Interested persons who are able to participate from July 1 to August 30 should write to Dr. E. Lowell Kelly, Department of Psychology, University of Michigan, Ann Arbor.

The University of Washington announces two openings for clinical psychologists to be filled next fall. The first position is for someone with the PhD and several years of post-doctorate clinical experience as well as an internship at a psychiatric institute for adults. The work will consist of teaching clinical courses at the graduate level and supervising a general training program in clinical psychology. It will carry the rank of assistant professor at a salary of $3807, or associate professor, for an unusually well qualified candidate, at a salary of $4608.

The second position is that of Resident Psychologist at the Buckley State Custodial School, with the rank of lecturer at the University of Washington. The PhD is required but not as extensive post-doctorate experience as for the first position. The salary is $3000 plus maintenance.

Inquiries regarding these two positions should be addressed to the Department of Psychology, University of Washington, Seattle 5, Washington.

The Jewish Vocational Service wishes to employ vocational psychologists and vocational counselors in larger communities throughout the country. The requirement for these positions is the MA or equivalent, and the salaries are from $2200 to $4000. For information write to the Jewish Occupational Council, 1841 Broadway, New York 23, New York.

The Fairfield State Hospital announces several vacancies in the Psychological Laboratories for either men or women. The stipend is dependent on the qualifications and objectives of the applicants and ranges from $1200 at the intern level, minimum requirement college degree with a major in psychology, to $3240 at the senior staff grade. Full maintenance at the hospital including room, board, laundry, and limited medical care may be arranged at $316 a year.

Applications should be submitted to Dr. Joseph R. Grassi, Director of Psychological Laboratories, Fairfield State Hospital, Newtown, Connecticut.

The New York State Department of Civil Service will conduct a series of examinations within the next few months and the following titles will be included: # 4331, Assistant in Test Development, Education Department, $3000–3660; # 6008, Junior Educational Supervisor, Research, Education Department, $2280–2880; # 6024, Senior State Veteran Counselor, Executive Department, $4620–5720; and # 6026, State Veteran Counselor, Executive Department, $3720–4620. Interested applicants should write directly to the Department of Civil Service, State Office Building, Albany, New York, stating the title of the specific examination in which they are interested and a detailed announcement and application blank will be sent to them.

The New York Zoological Society, in order to utilize its resources for the investigation of animal behavior problems, is offering four grants-in-aid for work in the Zoological Park in the Bronx during the summer of 1947. The grants will be $500 each and in addition the appointees will be provided with living quarters. The grants will be awarded to individuals who hold at least one advanced degree in the field of zoological sciences, and who are capable of independent and cooperative research. Applications should be made before May 15 to Fairfield Osborn, 630 Fifth Avenue, New York 20, New York.

The department of psychology of the University of Denver is offering several assistantships and fellowships to qualified graduate students. Persons with experience in clinical work with children or in student testing and counseling are particularly needed. Stipends range from $600 to $1,600 per year. Applications should be sent to Dr. R. B. Ammons, Department of Psychology, University of Denver, Denver, Colorado.

When you are changing your address for any of the journals published by the APA, or as a member of the APA, please let us know, if possible, four weeks in advance. Give old as well as new address and add zone number to meet postal requirements. If you are unable to notify us in advance kindly leave instructions and postage with your postmaster for forwarding your journals. Second class matter requires postage when remailed to a different address. All changes of address should be sent to the Office of the Executive Secretary, 1515 Massachusetts Avenue NW, Washington 5, D. C.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 — June, 1947 — Number 6

In this Issue

Annual Report of the Policy and Planning Board of the American Psychological Association: 1947 191
Clinical Training Facilities: 1947: ROBERT R. SEARS 199
Picture of the Committee on Graduate and Professional Training 206
Comment 207
Opportunities for Negroes in Psychology: JAMES A. BAYTON 207
Counterpoint to a "Footnote to Military Psychology": IRVING C. WHITTEMORE 208
The Future of Psychology, or the Goose that Laid the Golden Eggs: SAMUEL W. FERNBERGER 209
Pavlov Letter 210
Twelfth International Congress of Psychology 211
Formation of a Committee for the Study of Animal Societies Under Natural Conditions: J. P. SCOTT 212
Across the Secretary's Desk 213
Personnel Placement Activities of the APA: ENID S. LEY 213
1947 APA Election Ballot: DAEL WOLFLE 215
Psychological Notes and News 216
Convention Calendar 220

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

ANNUAL REPORT OF THE POLICY AND PLANNING BOARD OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION: 1947

THE annual spring meeting of the Policy and Planning Board was held April 12–15, 1947 at the North Jersey Training School at Totowa, New Jersey, which again extended its generous hospitality. The full membership was in attendance: Marion A. Bills (Secretary), Clarence H. Graham, Ernest R. Hilgard (Chairman), Donald G. Marquis, Robert R. Sears, Laurance F. Shaffer, David Shakow, Ruth S. Tolman and Lloyd N. Yepsen. Dael Wolfle, Executive Secretary of the American Psychological Association was also present and Helen Stanwood, of the Aetna Life Insurance Company, acted as recording secretary.

Ten sessions were held during the four days of the meeting and problems of the present and future welfare of the Association and of the profession were considered in detail and with deliberation. In accordance with a decision made at a meeting of the Board during the American Psychological Association convention in September 1946, requests for suggestions for items of the agenda had been sent to officers of the American Psychological Association and of the Divisions, and to the membership through an announcement in the March 1947 issue of the AMERICAN PSYCHOLOGIST. In response to these requests many communications were received. All of these were examined and discussed and either constituted parts of the agenda of the meeting or were forwarded to appropriate committees or other agencies for consideration or action. This second annual report to the membership was prepared by the Board during the meetings.

WHO IS A PSYCHOLOGIST?

Clarification of the definition of a psychologist is becoming increasingly necessary with the development of professional activities in psychology. While those with psychological training of all varieties and levels can make significant contributions, it is often necessary to distinguish between the qualified and the unqualified for particular purposes. Clear designation of who is a psychologist is a protective measure for both the public and the profession. There are at present no clear public standards by which a person who is uninformed in the intricacies of psychological training can decide who is qualified and who is not.

The response to the need for clearer designation of qualified psychologists has been vigorous and widespread. As a matter of fact, the efforts to grade and classify psychologists have been so numerous and uncoordinated that there is grave danger of confusion. Academic degrees designate three grades —the bachelor, the master, and doctor. Membership in the American Psychological Association is at two levels which do not correspond with any of the three academic grades. Membership in state associations provides further distinctions which vary greatly from one state to another. And now certification promises to add a new and different set of grades. The American Board of Examiners in Professional Psychology will certify diplomates in several specialty fields with a minimum of five years experience beyond the doctoral degree; the State of Connecticut certifies psychologists with the doctoral degree and one year of experience; Virginia certifies only clinical psychologists with the doctoral degree and five years experience; and other states have adopted or propose to adopt still different standards. Psychologists themselves are beginning to be confused by this array of distinctions. Have we any right to expect the public to be able to answer the question "Who is a psychologist?"

After discussion of many specific examples of the need for clearer designation of the levels of psychological qualification in civil service, Army and Navy, and in professional practice, the Board feels that the time has now come when a general overall policy is necessary. This policy should achieve four objectives:

1. The number of designated levels of psychological qualification should be kept to a minimum.

2. The levels should be established at the most

critical points in the training and experience of the psychologist.

3. The levels should be as comparable as possible among all the relevant agencies. This consideration would apply to national certification, state certification, and membership grades in national and state associations.

4. The levels should reflect the trend toward higher standards of training and experience, while at the same time protecting the interests of established psychologists of demonstrated competence who might not meet the formal requirements of new standards.

In the following sections the application of the general principles to specific problems of definition will be examined in order to formulate recommendations for practice.

CERTIFICATION

The need for clearly defined levels of professional competence becomes obvious in relation to the problems of certification. The two types of certification under consideration are the professional, where standards are set by the psychological group itself, and the legal, where standards are set by the state. The American Board of Examiners in Professional Psychology (ABEPP) has already been established and has set standards which, except for persons in whose cases certain requirements will be waived, call for the doctoral degree and five years of professional experience. Such standards are high but necessary to indicate the diplomate level. They compare favorably with the requirements set by other professional specialty boards and make possible the acceptance of psychologists on a high professional status. There is also great need for a standard of professional qualification at a lower level that would characterize competent persons having less experience. Although it does not seem desirable for ABEPP to establish such a level, the goal can be accomplished in other ways.

One important way is through state legislative action which may involve either certification or licensing. In certification no restriction is placed on practice but only on the use of a title such as "Certified Psychologist." In licensing, a restriction is placed on practice as well as on the use of certain titles. Careful consideration of these alternatives leads the Board to believe that certification is the more desirable objective for psychology at present. The reasons for this belief relate to the difficulties which exist at present in defining the field, in the establishment of exact standards, and the dangers of too early crystallization of requirements.

Once the decision to certify is made, the issue arises as to the level of experience considered necessary for certification. In such a plan as that successfully adopted in Connecticut, legislative action has specified the level of the doctoral degree plus one year of experience. The law there differs from the Virginia law, which requires five years of experience in additon to the doctorate. Although the latter law sets admirably high standards and duplicates the requirements set by the professional examining board, it does not include a desirable first stage of certification, such as is provided by the Connecticut law.

Another, and quite important, distinction between the Connecticut and Virginia laws involves the principle of the inclusiveness of certification. Whereas the Virginia law specifies the certification of "clinical psychologists," the Connecticut law certifies "psychologists" generally. After consideration the Board felt that it was desirable at this lower level of relative non-specialization to accept the undifferentiating certification represented in the Connecticut law. Such a plan makes it possible for the public to identify psychologists who are recognized members of the profession.

The Board therefore recommends to the Conference of State Psychological Associations that when it seems desirable and possible for any state society to promote legislation for standards, it be of the certification type rather than the licensing type and that the level be set at the doctoral degree plus one year of experience, and that no attempt be made at this level to differentiate among the specialized fields of practice. The Board further suggests that the Conference might consider the possibility of drafting model legislation for presentation to the individual state societies. This would encourage the establishment of uniform laws and thus would facilitate reciprocity among states.

MEMBERSHIP LEVELS

Membership in the APA is another measure of the preparation and qualifications of the individual psychologist. To avoid confused and variable standards, it may be desirable to define the grades of membership in terms parallel to those advocated

for levels of certification. At present, the requirement for election as Fellow ordinarily includes the possession of the doctoral degree and four years of acceptable professional experience. For certification, ABEPP requires a minimum experience of five years. This discrepancy could be removed without difficulty by changing the minimum experience requirement for Fellows to five years at some announced future date. This step would make it easy for certain divisions, whose interest is in a certifiable specialty, to substitute certification for the training and experience requirements for the election of its Fellows. It would also be an advantage to the divisions with theoretical and experimental interests, in that Fellowship would designate the same high standard as that required for certification.

In keeping with the trend toward higher standards for newly trained psychologists, the APA may wish, in a few years, to define the minimum admission requirement for new Associates as the possession of the doctoral degree. This would be harmonious with the definition of the primary grade of certification at the state level, which should require the doctorate. If this stage is reached, the Association will be better prepared than at present to answer the demands of civil service, military, and other organizations for a basic definition of psychologist. A *psychologist* would then be a person who has received a doctoral degree in psychology from an accredited institution.

The Policy and Planning Board suggests that the raising of standards for membership be done gradually, with full discussion and thoughtful consideration, and without prejudice to the status of the present Associates of the APA. It is especially important that persons without the doctoral degree who are now members of the Association shall not be threatened with loss of membership rights or voting privileges. It therefore recommends new requirements for membership to be considered for an effective date such as January 1, 1950, and that they should apply only to those who may be elected as Associate, or advanced to Fellow, after that date.

If these proposals are approved by the Council of Representatives and by the members of the APA, changes in the by-laws would be made substantially as follows:

The minimum requirement for election as a *Fellow*, after January 1, 1950 would be the possession of a doctoral degree, and five years of acceptable professional experience. To this might be added such evidence of professional qualifications as may be required by the several divisons, which may include research publication in some divisions, and additional or different demonstrations of competence in other divisions. This would not affect Fellows elected before 1950.

The minimum requirement for initial election as an Associate, after January 1, 1950, would be the possession of a doctoral degree, which is approximately the level recommended for certification by the states. The change would have no effect on present Associates, or on those elected up to 1950. As at present, Fellows and Associates would be the voting members of the Association.

After January 1, 1950, new *Affiliates* would include persons with qualifications less than those of Associates. Student Affiliates, Foreign Affiliates and Division Affiliates would remain as at present.

The Policy and Planning Board recommends these changes and proposes that suitable amendments to the by-laws be submitted to the Council and to the members.

ACCREDITATION

What the psychologist becomes is, to a large extent, determined by the quality of his training. Such training, then, is a matter of paramount interest to the profession as a whole, and the specification of minimum standards is a problem which merits the never-failing attention of the American Psychological Association. It is the opinion of the Policy and Planning Board that such specification can best be carried out by means of accreditation procedures.

Accreditation is expensive and time-consuming; it has long-range implications for the profession and for the institutions evaluated. It has powerful potentialities for good and some possibilities of endangering the rapid development of training. The reasons for accreditation are of importance, however, and must be thoughtfully considered by the members of the Association.

In its simplest form, accreditation means that some agency, such as an Association committee, examines the training facilities and procedures of institutions and decides which institutions satisfy certain criteria of "adequacy." The list of such institutions is made public.

Accreditation is primarily a protective device for three groups of people,—the public, the profession, and the student. Consider first the public. Accreditation provides for the public an explicit guarantee that a graduate of an accredited institution has had a specified minimum of appropriate training experience. Obviously, it cannot indicate how much the person has learned from this experience, but it does indicate that the training personnel of that institution has adjudged him sufficiently trained to be graduated with a degree and accorded the status of a professional colleague. Since the training personnel who made this judgment are accredited, i.e., are themselves judged competent for this task by the profession's accrediting committee, the public has, in effect, a direct indication that the graduate is both competent and ethical.

In a profession that has such deep significance for the welfare and dignity of those whom it serves, the protection of the public has immediate and drastic importance for the profession itself. To the public, the acts of one psychologist inevitably are representative of all psychologists. If improperly trained and professionally unethical persons destroy public confidence, the profession cannot grow. The competent will go down with the incompetent. Justifiably, the public and other professional people will look with skepticism on the psychologists' efforts to serve their vital function in contemporary society. Accreditation will not eliminate this hazard altogether, but it will markedly reduce the dangers and will insure able members of the profession that the effectiveness of their services will not be diluted by inadequately trained colleagues.

Not the least part of an accreditation procedure is the protection it gives to the individual in training. Confidence in one's own training and capabilities is an important and necessary aspect of professional attitude and practice and is best nurtured by the approval of one's peers and superiors. The properly trained psychologist may be expected to develop an attitude toward his work which, when combined with serious self-assessment, guarantees fitting professional behavior. The individual learns to have respect for himself and insight into his own limitations. Concurrently he develops an understanding of his colleagues, and the mutual regard thus formed between individuals is a firm basis for inter-professional relations. Psychological effects of the type mentioned are of great importance in insuring the status of a given individual. These subjective standards are as important as legislative restrictions in insuring that the individual without adequate training will not practice to the detriment of society, the profession, and himself.

It is recognized that accreditation is not an unalloyed blessing. It may bring with it certain undesirable consequences whose elimination will require unremitting and continuous effort. In particular, accreditation may lead to: (1) curriculum rigidity and conservatism in the face of new advances; (2) a distrust of healthy modification and experimentation as contributors to progress; and (3) a conservative, restrictive "ingroup" attitude on the part of individuals which may be detrimental to the general welfare of the profession. Only an accreditation program which is experimental, forward-looking, and responsive to criticism can safeguard against such dangers.

Many factors of present-day life are conducive to accepting sub-minimal standards for training in the profession of psychology. In particular, the argument is emphasized that psychologists are so badly needed that the psychological profession owes it as a duty to society to supply them as rapidly as possible. The Policy and Planning Board takes the position that the welfare of the public, the profession, and the student will be best served if adequately trained psychologists are supplied at as rapid a rate as is commensurate with proper quality safeguards.

Conclusions derived from the Board's discussion may be summarized as follows:

(1) Accreditation, generally conceived, may be by specialized areas or with reference to the total field of psychology. Inasmuch as the need is most pressing in the field of clinical psychology, accreditation should be carried out in that area first. At present, the Board is not in a position to consider all ultimately desirable goals in accreditation, and it is certainly not ready to propose that accreditation be applied in all specialized fields and in the general field. However, a great need for explication of the problem exists in clinical psychology. Only the future, near or remote, may tell when accreditation is desirable in other areas representing restricted or general subject matters and professional interests.

(2) The APA has responsibility for designating appropriate agencies for accrediting psychological training in various areas where the need may arise.

(3) Accreditation should include visits by members of the accrediting agencies to the institutions under examination.

In view of these considerations, the Policy and Planning Board recommends that the APA continue its present policy of evaluating and accrediting institutions in the field of clinical psychology. It is recognized that the practice will retard somewhat the rate of production of persons who might be employed in positions which should demand adequately trained clinical psychologists. Despite this fact, the Board is of the opinion that the long-range advantages to the public, the profession, and the individual student will far outweigh whatever temporary benefits might be derived from the training of marginally useful personnel.

NON-DOCTORAL TRAINING

Psychology has many responsibilities for training other than the preparation of professional psychologists. Although in the opinion of the Board professional practicum courses should not be offered at the undergraduate level, effective undergraduate teaching in psychology imposes the obligation on the profession to provide, in addition to theoretical and indirect acquaintance with psychological phenomena through books and lectures, direct contact with practical materials and life-like situations. This is important since it permits students considering a career in psychology to become more intimately acquainted with the breadth and social implications of the field. Just as important is the contribution of such teaching to the general education of the student not primarily interested in psychology as a profession but rather in preparing himself for other fields or for better carrying his responsibilities as parent and citizen.

This would encourage, as essential elements of courses in psychology, the use of sample testing, experiences with interview techniques, field study of individual differences, observation of children and adults under various conditions, and the ways of studying psychological phenomena in a first hand way. The intent here is quite different from that of a professional course which aims, through varied and intensive practice with a diagnostic, manipulative or therapeutic procedure, to achieve the practical training of the psychologist in its skilled use.

The implications of this view carry over to the graduate level. It is the opinion of the Board that MA degrees awarded for lower level professional training of the psychologist should be discontinued. It is, however, desirable that work for the MA degree taken in the field of psychology for cultural, scientific, or general social reasons be continued.

More important, however, is the possible place of an MA degree as evidence of accomplishment for various fields closely associated with psychology in an ancillary or technical relationship. Specialists such as vocational guidance workers, personnel technicians, speech correctionists, counselors, teachers of exceptional children, test technicians, and workers in the remedial field require a considerable amount of instruction in certain aspects of psychology. It is important that this training be obtained under psychological auspices and that such persons shall work in association with or under the supervision of psychologists.

THE BROAD RESPONSIBILITY OF PSYCHOLOGY

In the present emphasis upon certification and accreditation there is some danger that we may be giving undue attention to clinical psychology to the neglect of other fields equally important for the advancement of psychology as a science and as a profession.

Many of the problems discussed in reference to clinical psychology recur in these other fields. That is, there are the problems of defining a psychologist at approximately doctoral level and at a higher level, such as represented by Fellowship status in the Association. Then there are the problems of non-doctoral training for work in public opinion study, in recreation, in advertising, in teaching, or other fields,—that is, for people profiting by psychological training but not to be considered as psychologists. The problems of recognizing or in some way accrediting training institutions and facilities in these fields are logically no different than in clinical psychology. It is important to recruit able students if the tasks requiring such training are to be competently manned.

Social Psychology. Attention may be called to the importance of studies bearing on public policy in matters of inter-group and international relations. Developments in public opinion study represent but one aspect of this opportunity. It would be a serious mistake if the developments in psychology failed to include cooperation with other social sciences in furthering adequate training and research

in these fields. Psychology has a public responsibility in relation to many aspects of problems of human relationships.

Educational Psychology. The schools, both public and private, are institutions making use of psychological principles. The potential service of psychology to the schools, and through them to citizenship training, is very great indeed.

While at one time educational psychology had a prestige position in relation to education, the Board believes this prestige to have been diminishing in the last years rather than increasing. If this belief is correct, the responsibility for not giving to education the kind of help which the educator needs rests within the psychological profession.

The early concepts of educational psychology in the fields of measurement and of subject-matter learning are no longer fully appropriate to current educational objectives and curricular practices.

Perhaps the most satisfactory place of psychology in relation to education has been in the guidance and clinical services, where the usefulness of psychology is recognized by the educator, although in most places inadequately provided for in school budgets. The service of psychology has been less satisfactory in the applied psychology of learning and in the social psychology of the school situation.

It is urged that psychologists recognize this state of affairs, and explore the opportunities to do research cutting across departmental or school lines in order to improve the service of psychology to the educational profession.

Experimental Methods. The teaching laboratory may become, like the statistical laboratory, a place in which methods of obtaining and handling data for purposes of science would be learned, rather than some particular content. It is true that methods need to be learned in situations resembling those in which they are likely to be used. For this reason the experimental laboratory course should provide a variety of content beyond that traditionally contained in it. It is also true, however, that some types of content lend themselves better than others to the teaching of principles of scientific method.

The content of the traditional laboratory, as content, may be taught in separate courses or in specialized laboratories. What is needed in common by all psychologists is the training in experimental procedures and methods in relation to a theoretical rationale. For example, the person who is to work out the problems of accident reduction in a modern industrial establishment must know by actual practice the fundamental principles of setting up an experiment and checking the results. With appropriate theoretical background he will be prepared to search for and identify the significant variables such as those involved in peripheral vision and depth perception as well as the social factors.

If psychology is to continue its development as a science, those prepared by ability, training, and interest to work in the field of pure science should receive full encouragement and support. Their work in delving into the unknown contributes to the fundamental development of psychological knowledge. The Board proposes to examine more fully in a later meeting the problems of personnel, standards, facilities, and methods, which represent the interest and responsibilities of the APA as a scientific organization in the richer development of psychology as science.

THE PRACTICE OF PSYCHOLOGY

A number of problems have arisen from the recent wide extension of the professional practice of psychology. In this formative period, psychology has an opportunity to evolve the principles and ethics of practice that will most effectively attain its broad objective, which is the maximum welfare of the clients who are served. Psychology must adopt only those procedures and methods that will protect the public against inadequate or fraudulent services. The profession must also be protected from disrepute that might arise both from the quackery of pseudo-psychologists, and from the ill-considered enthusiasms of its own members.

The Central Office and many individual psychologists frequently are asked for opinions on practicing agencies. Sometimes it has been difficult to warn inquirers against quacks, and to direct them to reliable sources of help, because of the lack of a list of accredited centers for psychological service. Until a list of approved agencies is available, it will be impossible to provide adequate information for those who wish it.

The Board therefore regards the preparation of such a directory as a project of the highest priority. The work of the Committee on Psychological Serv-

ice Centers should be supported and expedited. It is recommended that this Committee work with and through the state psychological associations, to utilize local information fully and to coordinate the preparation of national and state directories of psychological service centers.

The two principal patterns in which psychological service may develop are group practice and individual practice. Considerations that favor each of these types of service were discussed at length by the Board. Group practice offers many advantages in mobilizing the services of a number of skilled persons, and often of a number of professions, in the analysis and determination of the client's basic problems and in the selection of methods and techniques to deal with the condition. There is also the opportunity to select the best prepared specialist and to secure consultation during the process of therapy, retraining or rehabilitation. Although these factors apply most clearly to the practice of clinical psychology, they are also applicable to industrial, personnel, and other fields. On the other hand, group practice cannot be mandatory in all instances. In some small towns and rural areas, it is conceivable that an individual psychologist may give valuable service when group service would be impracticable. This is an issue on which a final recommendation cannot be made at this time, but full and thoughtful discussion by the appropriate Divisions, and by interested psychologists, is recommended.

Problems of professional ethics are closely allied to those of professional practice. The preparation of a code of ethics, for which a special committee recently has been appointed, will be of great value. Also of value will be a wide discussion, among the membership of the Association, of ethical problems for the purposes of uncovering the ethical issues on which decisions will have to be made.

SPECIAL PROBLEMS

Correspondence from members raised certain additional problems, and the Board also reviewed some of the recommendations made in its annual report for 1946.

Central Office. In the previous report, the Board emphasized the desirability of decentralizing APA activities as much as possible. It was felt that participation by divisions, affiliated societies, committees and individuals would be an important factor in maintaining the vigor and initiative that have so vividly characterized the growth of psychology in the past. For this reason, the Board again considered at some length the functions of the Central Office, and reviewed its activities of the last year.

The Executive Secretary reported the plans for future publication of the Yearbook, and these appeared to be suitable for the present needs of the Association.

Special consideration was given to the employment service aspect of the Office. At the present time there are relatively few applications for positions on file, but throughout the year there has been a heavy volume of requests for assistance in locating prospective employees. It was agreed that the service should be continued, and that the Executive Secretary should be urged to take the initiative in recruiting a larger number of employment registrations. The service is moderately expensive and there was discussion of the propriety of charging a special fee for registrants, but the Board concluded that a fee high enough to cover the cost of the service would be an undue burden on the very members most in need of it.

Attention was given to the long-range aspects of the Association's financial status. Various favorable factors led to the conclusion that it would now be safe to provide additional assistance of a professional character in the Central Office in order to release the Executive Secretary's time for more extensive personal consultations with affiliated groups. In view of the important role of the State Associations in the profession's development, the Board felt it important that the Executive Secretary assist the Conference of State Associations, as much as possible, in their efforts to establish state associations where none now exist.

Annual Dues. The present financial status of the Association does not warrant any extensive increase in dues unless and until greater services are desired of the Central Office. Discussion of this matter led at once to a consideration of the differential rates charged Fellows and Associates. Attention was called to the fact that Fellowship status was originally intended to signify outstanding achievement in the profession. At one time this honor was accompanied by the voting franchise, a privilege denied

the Associates. Since reorganization the franchise has been extended to include all members, both Fellow and Associate, and now the only significant difference between the two designations is a financial one. Fellows pay $15 a year and Associates pay $10. The Board sought means of divorcing the financial factor from the considerations determining elevation to Fellowship.

After a discussion of several plans, it was concluded that uniform dues for Fellows and Associates would be desirable. Twelve dollars a year would provide income to the APA approximating that derived from present dues.

Division Representation. Communications from the members have indicated certain difficulties in the operation of the various Divisions. These have led the Board to recommend changes in the by-laws necessary to effect two modifications in the plan of Division representation.

Because the Secretary of a Division exercises a major role in its activities, because he needs to be fully informed in all matters affecting the Division, and because his election tends to indicate a high degree of confidence on the part of the Division membership, it was felt that the Secretary of each division should serve as a Representative to the Council for a term corresponding to his term of office as Secretary. The number of Representatives of a Division would remain as designated in the present by-laws, and the Secretary would then constitute one member of the quota of each Division. If any society which is a Division of the APA should elect as Secretary a person who is not a member of the APA, that Division would then choose a member as Divisional Representative to substitute for the Secretary.

Since election procedures continue to present complications to Division members because of the large number of nominations required each year, the Board recommends that the term of office of Division Representatives should be three years instead of one. Division Secretaries would constitute an exception, since in some cases secretarial terms might be longer than three years. Terms should be staggered to achieve continuity within the Council. In case the size of a Division should be reduced at any time so that the new quota becomes less than the existing membership on the Council, the incumbent Divisional Representatives would complete their terms.

Manual for Division Officers. Because of the many administrative relationships which are a natural outgrowth of the divisional organization of the APA, it seems desirable to the Board that the office of the Executive Secretary prepare a manual for the use of the Division officers. Such a manual would serve the purpose of reducing the work of both the Division officers and the Executive Secretary by keeping officers informed of the Divisions' responsibilities in relation to such matters as nominations, procedures for endorsing Fellows, etc., and the services which the Association as a whole through the Central Office provides in the way of financial contribution, mailing aid, etc.

The manual should have a calendar giving the important events and deadlines for the year in addition to a section describing in detail the procedures with respect to the various interrelated functions.

The Board elected Robert R. Sears its Chairman for 1947–1948.

This report is published annually sufficiently in advance of the Annual Convention in September that there may be opportunity for widespread discussion of the issues presented. It is especially important that attention be given to the suggestions and recommendations for legislative action by the Council of Representatives.

Marion A. Bills (1945–1948), *Secretary*
Clarence H. Graham (1946–1949)
Ernest R. Hilgard (1945–1948) *Chairman*
Donald G. Marquis (1945–1947)
Robert R. Sears (1946–1949) *Chairman-elect*
Laurance F. Shaffer (1945–1947)
David Shakow (1946–1949)
Ruth S. Tolman (1945–1948)
Lloyd N. Yepsen (1945–1947)

CLINICAL TRAINING FACILITIES: 1947

A Report from the Committee on Graduate and Professional Training

ROBERT R. SEARS

Iowa Child Welfare Research Station

At its interim meeting in December 1945, the Board of Directors received a request from the Veterans Administration to provide a list of institutions that possessed adequate facilities for providing training to the doctoral level in clinical psychology. The Board referred this inquiry to the Committee on Graduate and Professional Training, which had been collecting fairly extensive data about graduate training facilities during the preceding months. Certain of these data appeared to be useful for evaluating the adequacy of training facilities, and the Committee re-examined them with the following aspects in mind: (1) specialized clinical staff members, and (2) practicum facilities with suitable supervisors. A summary of the data so examined was published in This Journal in May 1946.[1]

By September 1946, twenty-two institutions had reported facilities that seemed to the Committee adequate for doctoral training in the clinical field. The Veterans Administration at once began to introduce graduate students into these departments, and early in this present school year there were approximately two hundred such students enrolled in these twenty-two institutions.

The pressing demand for clinical psychologists in various branches of government service, as well as in educational institutions and local clinics, led the Veterans Administration to plan for a much larger program for next year. In the meantime, the U. S. Public Health Service had developed a similar program, and, at the September meeting of the Council of Representatives, presented a request that the APA provide it with a list of training institutions also. In the case of both government agencies, it is evident that the administrative officers desired to have the psychological profession itself determine what constituted adequate training facilities.

The Council of Representatives accepted this responsibility, and requested the Committee on Graduate and Professional Training to "prepare further information on departments of instruction and programs of training."[2] The present report describes the findings of such study; it is limited to institutions which have declared their intention of presenting doctoral training in clinical psychology.

PROCEDURE

The impetus to clinical training by the Veterans Administration program had been so great during the preceding months that the fall of 1946 found most institutions radically changed in personnel and facilities. It was therefore necessary for the Committee to start from scratch and collect detailed information about each department. The extent of this task precluded the possibility of using a visitation method by members of the Committee, although it has been evident from the beginning that institutional programs are frequently very highly individualized and only a direct, personal study of the situation provides a really adequate understanding of the nature of the training program. In lieu of such investigation, the Committee prepared extensive questionnaires which were submitted to the department chairmen.

Four types of questionnaires were prepared. The *first*, to be filled out by the department chairman himself, provided information about the staff, its teaching and research specialties, amount of time devoted to various activities, number of students, graduate curriculum, and library facilities. The *second*, to be filled out by the department's director of clinical training, provided more information about the clinical training program itself and the details of practicum facilities. The *third*, one copy of which was to be filled out by each member of the

[1] R. R. Sears, Graduate training facilities. *Amer. Psychologist*, 1946, **1**, 135–150.

[2] Proceedings, Fifty-Fourth Annual Meeting, American Psychological Association. *Amer. Psychologist*, 1946, **1**, November, 493–532 (Item 64, p. 500).

clinical staff and each practicum supervisor whether on the staff or not, provided details of the individual staff member's training and experience in the clinical field. The *fourth*, to be filled out by each member of the staff who was engaged in non-clinical graduate teaching, provided similar information, but was oriented to non-clinical matters. Both the latter two questionnaires served to give information concerning teaching load, type of teaching, relation of the teacher to the graduate training program, and several forms of past experience.

These materials were sent to the chairmen of departments in the twenty-two institutions which had been reported as having adequate facilities in the previous year and to all other institutions in the United States which were known to present doctoral work in psychology. This list was obtained from the Committee's previous survey.

Questionnaire materials had been returned by thirty-three institutions in mid-January, and on January 26–27 the Committee met in Chicago for a study and evaluation of them.

Since both government agencies wanted, among other things, a judgement as to which institutions had adequate facilities for doctoral training in clinical psychology, the Committee spent the first day in studying several types of programs and in developing some objective standards, or criteria, by which the institutions themselves and the Committee could judge how nearly and in what ways a given program approached this goal of "adequate facilities." The remainder of the time was devoted to a detailed study of each of the thirty-three programs in order to determine the degree to which each institution met the criteria. In the three months since the Committee met, seven additional schools have submitted data which have been evaluated by mail.

In each instance, the Committee's evaluation and recommendations have been submitted directly to the department chairman concerned. The final listing of facilities in Table 1 has been verified through this correspondence.

TWO LISTS

The two government agencies are interested in somewhat different matters. The USPHS requested a list of all institutions available for doctoral training in clinical psychology, and wished to have some notation as to what each institution needs in order to bring its facilities up to what the Committee considers adequate. The VA, on the other hand, wished a list of institutions which are already fully adequate or have such minor needs as can easily be met by some assistance from the VA itself. The following paragraphs are quoted from the Committee's report to the Officers and Board of Directors of the Association:

"The list for submission to the Veterans Administration includes those universities which have presently adequate facilities for training to the doctoral level in clinical psychology. Many of these institutions need nothing additional, in the Committee's opinion, to give excellent training in this field. Some of the institutions need certain modifications or additions to their programs, staffs, or practicum facilities. These changes or additions are of relatively minor importance, however, and in the Committee's opinion should not hold up the VA from initiating its training program in those institutions.

"The second list, which has been prepared for submission to the U. S. Public Health Service, is to be considered as including all those institutions presented in the first list, and in addition includes several institutions that have fairly serious need of some modification in their program or of additional facilities. The Committee is specifying its interpretation of these needs in each case, and does so on the assumption that, if these needs are met, the given institution will thereby become a fully acceptable one for doctoral training in clinical psychology. Under such circumstances its name might be referred to the Veterans Administration for inclusion in its list of approved institutions."

In Table 1, the institutions included in the list prepared for the VA are indicated by an asterisk.

CRITERIA OF ADEQUATE FACILITIES

In order to have a yardstick by which the different training programs could be evaluated, a set of thirteen criteria were developed. These relate in the main to staff and to practicum facilities. The reason for this lies in the Committee's assumption that competent professional psychologists supplied with adequate tools, and working in a satisfactory organizational matrix, may be relied upon to produce effective training. In this case, tools refers to practicum facilities.

This assumption has had two consequences: (1)

that there should be little emphasis on the details of curricular requirements, and (2) that teacher-student ratio should be determined by the department's own experience and needs. The criteria, therefore, are the Committee's estimate of the *minimum* facilities required for the training of even one student to the Ph.D. in clinical psychology. How many *more* than one can be trained with such facilities is a matter for local decision.

In one respect this reasoning has been violated; five areas of study have been listed as required. However, nothing is said as to how the student is to gain his competence; it may be by courses or may simply be verified by comprehensive examination. With this exception, the Committee has concerned itself only with staff and practicum facilities.

In order to understand the descriptions of criteria, it is necessary to keep in mind the following definitions:

1. Full-time graduate teacher = a sum of 1.0 obtained by adding together the fractional amounts of time contributed to graduate teaching by the various staff members.
2. Class A non-clinical teacher = Ph.D. previous to 1944; evidence of research orientation (e.g., published papers, directed theses, teaching research methods).
3. Class A clinical teacher = Ph.D. previous to 1944, or M.A. (or later Ph.D.) with 3 years of clinical experience, or qualifies as Fellow in Clinical Division, APA; shows evidence of research orientation.
4. Class A practicum supervisor = Ph.D., or M.A. with 3 years of clinical experience. Must be a psychologist, *not* psychiatrist, etc.

The criteria are as follows:

A. *Basic staff.*

1. There must be a total of not less than seven Class A persons on the staff, of whom four must contribute to graduate non-clinical teaching.
2. The amount of graduate non-clinical teaching must be equivalent to that provided by 2.0 "full-time graduate teachers."

These criteria reflect the Committee's opinion that there should be considerable diversity of staff members with whom a student can come in contact and be influenced. Since the Ph.D. is our highest academic degree, it seems reasonable to suppose that a student obtaining it should have had the opportunity to work with real experts in at least some of the fields. Unless there are at least seven persons, of whom three might be clinicians, it seemed likely that a good deal of the non-clinical graduate teaching would be performed by people whose main talents did not lie in the fields in which they taught courses.

B. *Curriculum requirements.* The curriculum must require that clinical students, for the doctorate, either take courses or pass comprehensive examinations in the following five fields.

1. Statistical or quantitative methods
2. Experimental methods. (Laboratory, research methods.)
3. Systems or theory.
4. Personality and psychodynamics.
5. Projective techniques.

Certain other types of *clinical* training (besides 4 and 5) which instantly leap to one's mind as being essential to the clinical Ph.D. are not listed here because they exist uniformly in all institutions, and there would be nothing gained by adding them formally to the list. Training in projective techniques is included not only because it is considered important in its own right, but also because, in some degree, its presence in a curriculum gives evidence of progressive administrative policy in the development of clinical training. The *non-clinical* areas listed here (1, 2, 3) represent the foundation of general psychology, and the Committee's action in this matter represents a very widespread opinion among both clinicians and non-clinicians that the Ph.D. degree, no matter in what area of psychology, should be a representation that the individual holding it is fundamentally a psychologist and has the conception of research and scholarship implied by that degree.

C. *Graduate clinical staff.*

1. There must be one Class A clinical teacher

who is not less than half-time on the psychology department budget.

2. There must be a total of not less than three persons who contribute to the regular teaching of graduate students in clinical psychology.
3. Their combined graduate teaching load in clinical psychology must total not less than that of 1.0 "full-time graduate teacher."

This criterion provides for some diversity in the people with whom the graduate student in clinical psychology comes in contact. He is not dependent upon the views or skills of a single faculty member in this field. It was the Committee's belief that a student should have an opportunity to secure his training, in part, from at least three different clinical persons. These persons might be devoting part of their time to practicum supervision or to undergraduate teaching or to the teaching of non-clinical graduate work, but at least they would all be sharing in the training of any student in the graduate clinical program.

The requirement that there be one person more than half-time on the department budget was selected in order that there might be someone who would be genuinely responsible for organizing the clinical program within the department and in connection with other departmental activities. It was the Committee's belief that if the supervision and programming of the entire training program were left to someone who served in no more than a consultant relationship to the department, there would inevitably result a lack of integration of the clinical program with other programs in the department, and that such a person would not be in a satisfactory position to understand fully the views of other members of the department, or to participate sufficiently in the total planning of graduate work in the institution.

D. *Practicum facilities.* There must be three practicum facilities in each of which there is one Class A practicum supervisor; these three supervisors must be composed of at least two persons (in other words, one person might be supervisor for two of the three practicums), and they may be the same persons listed under "clinical staff." These three practicum facilities must include:

1. A psychiatric facility in which the student will have opportunity to work in a team relationship with a psychiatrist.

   This is designed to provide experience with psychotic and neurotic adults. So far as the VA's needs are concerned, a VA psychiatric hospital or general hospital NP section or a VA mental hygiene unit, would be sufficient. If the department accepts non-VA students, however, an additional psychiatric facility must be available, since the VA facilities would not be available to non-VA students.
2. A child clinic.

   This might be a conventional mental hygiene clinic, a pediatric department of the hospital, a psycho-educational clinic, or any other facility in which children formed the major clinical client.
3. One additional practicum of any kind.

(*Text continued on page 204*)

CRITERIA LEGEND

A. Basic Staff
- **1.** Seven Class A persons on staff
- **2.** Graduate non-clinical teaching = 2 full-time graduate teachers.

B. Curriculum requirements
- **1.** Statistical or quantitative methods
- **2.** Experimental methods
- **3.** Systems or theory
- **4.** Personality and psychodynamics
- **5.** Projective techniques

C. Graduate clinical staff
- **1.** One class A clinical teacher; not less than half time on department budget
- **2.** Three persons for regular teaching of graduate students in clinical psychology
- **3.** Their combined graduate teaching load = not less than 1 full time graduate teacher

D. Practicum facilities
- **1.** Psychiatric facility; students have opportunity to work in team with psychiatrist
- **2.** A child clinic
- **3.** One additional praticum of any kind

TABLE 1

The extent to which 40 institutions meet the Committee's 13 criteria of "adequate facilities" for doctoral training in clinical psychology. See text for definition of criteria.

INSTITUTION	ADMINISTRATIVE OFFICER	ADDRESS	CRITERIA											
			Basic staff		Curriculum					Clinical staff			Practicum		
			A1	A2	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3
*California: Berkeley	E. C. Tolman	Berkeley	+	+	+	+	+	+	+	+	+	+	+	+	+
*California: Los Angeles	Roy M. Dorcus	Los Angeles	+	+	+	+	+	+	+	+	+	+	+	+	+
*Catholic Univ. of Am.	Thomas V. Moore	Washington 17, D. C.	+	+	+	+	+	+	+	+	+	+	+	+	+
*Cincinnati	Arthur G. Bills	Cincinnati	+	−	+	+	+	−	+	+	+	−	+	+	−
*Clark	Vernon Jones	Worcester, Mass.	+	+	+	+	+	+	+	+	b	b	+	+	+
Colorado	K. F. Muenzinger	Boulder	p	p	+	+	+	+	+	+	+	p	+	b	+
*Columbia Univ.	H. E. Garrett	New York	+	+	+	+	+	+	+	p	+	+	+	+	+
*Columbia: TC	L. F. Shaffer	New York	+	+	+	+	+	+	+	+	+	+	+	+	+
Denver	L. W. Miller	Denver	+	b	+	+	+	+	p	+	+	+	+	+	+
*Duke	Donald K. Adams	Durham, N. C.	+	+	+	+	+	+	+	+	+	+	+	+	+
Florida	E. D. Hinckley	Gainesville	+	−	+	+	−	−	−	+	+	−	a	−	+
George Washington	Thelma Hunt	Washington, D. C.	+	−	+	b	b	b	+	+	+	b	+	p	+
Georgia	A. S. Edwards	Athens	−	−	+	+	−	−	b	+	+	−	p;V	+	+
*Harvard	Robert W. White	Cambridge, Mass.	+	+	+	+	+	+	+	+	+	+	+	+	+
*Illinois	Herbert Woodrow	Urbana	+	+	+	+	+	+	+	+	+	+	+	+	+
*Indiana	B. F. Skinner	Bloomington	+	+	+	+	+	+	+	+	+	+	+	+	+
*Iowa	K. W. Spence	Iowa City	+	+	+	+	+	+	+	+	+	+	+	+	+
*Kentucky	M. M. White	Lexington	+	b	+	+	+	−	+	+	+	+	+	+	+
Michigan State Coll.	H. H. Anderson	East Lansing	b	b	+	+	+	+	+	+	b	b	+	b	+
*Michigan, Univ. of	D. G. Marquis	Ann Arbor	+	+	+	+	+	+	+	+	+	+	+	+	+
*Minnesota, Univ. of	R. M. Elliott	Minneapolis	+	+	+	+	+	+	+	+	+	+	+	+	+
Nebraska	D. W. Dysinger	Lincoln	+	−	+	+	+	+	b	+	+	b	+	+	b
	D. A. Worcester														
*Northwestern	R. H. Seashore	Evanston, Ill.	+	+	+	+	+	+	+	+	+	+	+	+	+
*Ohio State	H. E. Burtt	Columbus	+	+	+	+	+	+	+	+	+	+	+	+	+
*Pennsylvania State Coll.	B. V. Moore	State College	+	+	+	+	+	+	+	+	+	+	b;V	+	+
*Pennsylvania, Univ. of	R. A. Brotemarkle	Philadelphia	+	+	+	+	+	+	+	+	+	+	a	+	+
*Pittsburgh	Wayne Dennis	Pittsburgh, Pa.	+	+	+	+	+	+	+	+	+	+	+	+	+
*Purdue	F. B. Knight	Lafayette, Ind.	+	+	+	+	+	+	+	+	+	+	a;V	+	+
*Rochester	G. R. Wendt	Rochester, N. Y.	+	+	+	+	+	+	p	p	p	p	+	+	+
*Univ. Southern Calif.	Neil Warren	Los Angeles	+	−	+	+	+	+	+	+	+	+	+	+	+
*Stanford	E. R. Hilgard	Stanford Univ., Calif.	+	+	+	+	+	+	+	+	+	+	+	+	+
*Syracuse	Roland McKee	Syracuse, N. Y.	+	+	+	+	+	+	+	+	+	+	+	+	+
	R. G. Kuhlen														
Texas	L. A. Jeffress	Austin	p	p	+	p	p	p	p	+	+	p	+	−	+
Tulane	Cecil W. Mann	New Orleans, La.	p	p	+	+	−	+	+	+	+	b	a;V	a	+
*Washington U.: St. Louis	John P. Nafe	St. Louis, Mo.	+	+	+	+	+	+	+	+	+	+	+	+	+
U. of Wash.: Seattle	Roger Loucks	Seattle	+	−	+	+	+	+	+	+	+	−	−	+	+
Wayne Univ.	Gertha Williams	Detroit, Mich.	−	−	+	−	−	+	+	+	−	−	+	+	+
*Western Reserve	Calvin S. Hall	Cleveland 6, Ohio	+	b	+	+	+	+	+	+	+	+	+	+	+
*Wisconsin	Norman Cameron	Madison	+	+	+	+	+	+	+	+	p	p	+	+	+
*Yale	C. I. Hovland	New Haven, Conn.	+	+	+	+	+	+	+	+	+	+	+	+	+

Symbols: + = meets criterion fully.
− = fails to meet criterion.
a = facilities are available; in process of arrangement.
b = facility or staff position has been budgetted.
p = plans completed but dependent upon securing further financial support.
V = psychiatric team practicum available for VA students only.
* = recommended for VA training program.

While considerable effort was made to define these various criteria accurately and objectively, the Committee is under no illusion that they can be applied in an easy and routine manner. Each institution has its own pattern and special arrangements.

Neither does the Committee consider these to be the only possible criteria. They are reasonable ones, however, and at the present stage of institutional development do not do violence to established training principles. On the positive side, they represent increased requirements beyond those established by the Committee last year, and a fair mark toward which growing schools can strive. If accreditation continues to be desirable for the profession, new criteria will gradually develop. Their nature is not altogether unpredictable, for the nation's best training programs will always and inevitably serve as the measuring sticks and models for accreditation criteria. The present criteria must be viewed only as steps along the way; they are useful for measuring one stage in a type of professional training that is changing and growing every year.

THE INSTITUTIONS

Forty institutions submitted information concerning their graduate training programs in clinical psychology. These included nineteen of the twenty-two which were approved in 1946; three of that group failed to return questionnaire material (Kansas, Fordham, New York University).[3]

In Table 1 is shown the extent to which each of forty of these institutions meets the 13 criteria listed above. Modifications in programs are going on so rapidly that it was evident from the beginning that plus or minus evaluations would not be very meaningful. In consequence, some additional notations have been used in order to indicate progress in meeting certain of the criteria.

Only 18 institutions meet all of the criteria. In addition to these, however, there are 11 institutions whose needs are relatively minor or for whom there is excellent prospect of early action in fully meeting the criteria. These two groups combined form the list presented to the Veterans Administration; they are indicated by an asterisk. As rapidly as any of the remaining institutions reaches the degree of readiness-for-training indicated by the present VA list, it will be added to the VA list.

[3]These three institutions along with the University of Chicago, which turned in its material too late for inclusion in Table 1, and Tulane are cooperating in the clinical training program of the VA. For 1947–1948 the VA is continuing to send trainees to those institutions approved in 1946.

COMMENTS

Certain problems stand out for a number of institutions. First of all, there is the matter of staff. The great increase in demand for educational facilities has put a severe strain on the profession's supply of clinical psychologists. Even the larger and longer established training departments find themselves handicapped in some instances by inadequate numbers of clinical psychologists. The newer and smaller departments, which have not had a long history of training in this field, find the situation serious. It is gratifying to be able to report that there are no signs of a tendency to accept inferior personnel because of these difficulties. The situation is not likely to be alleviated to any great extent for another year or two, however, until some of the present students get their Ph.D.'s and have an opportunity to complete a year of internship.

A curious sidelight on the problem of staff comes from the area of practicum facilities. Institutions which are located in large metropolitan areas have had relatively little difficulty in securing adequate practicum arrangements, because the cities contain long-established clinics which have, in many instances, quite excellent staff. In smaller communities, however, where new practicum facilities are needed, the local agencies and the universities themselves have had considerable difficulty in securing appropriate personnel for non-university positions. The universities appear still to have some attractive power, and it looks at present as if the most seriously deprived group is that of newly established local agencies.

Another problem haunting a number of institutions is that of securing sufficient time from its staff for adequate graduate training in the non-clinical field. Several of the listed institutions have, quite recently, turned more heavily to graduate work after a long traditon of largely undergraduate teaching. Understandable difficulties are being encountered in reducing the undergraduate teaching load of the staff and in inaugurating

purely graduate work of sufficient quality and quantity to provide for adequate doctoral training.

Geography has played some other tricks. A number of institutions are located in small towns well away from a metropolitan center. In some of these cases, there is no local hospital for psychiatric cases, and it has proved exceedingly difficult to locate adequate practicum facilities of this type. These geographical difficulties may prove difficult for some to overcome; in other cases it will be possible to develop local clinics with a psychiatrist on the staff, the financing to be carried by outside agencies.

Physical space is another rather surprising difficulty. In ordinary times, most universities have a certain leeway for the expansion of individual departments, but with the great increase in undergraduate and graduate students resulting from the termination of the war, most universities are being swollen to a point where they must erect temporary quarters for some offices and classrooms. The result is that any institution which has not previously had clinical facilities must beg furiously for the few additional rooms needed for its new activities. In two or three instances, expansion of clinical facilities is actually being held up by a lack of space.

Libraries on the whole show a pretty satisfactory status.

During the present year, the student load has been very severe in the majority of institutions. In most instances, the chairman reports that facilities exist for fewer students than are actually being processed at present. The necessity for reducing student populations and of making optimal use of present facilities points once again to the urgent need for adequate selective devices.

COMMITTEE ON GRADUATE AND PROFESSIONAL TRAINING

ROBERT R. SEARS
Chairman
State University of Iowa

JOHN G. DARLEY
University of Minnesota

E. LOWELL KELLY
University of Michigan

ELAINE KINDER
Rockland State Hospital

JEAN WALKER MACFARLANE
University of California

DONALD G. MARQUIS
University of Michigan

BRUCE V. MOORE
Pennsylvania State College

MARION W. RICHARDSON
Richardson, Bellows, Henry, and Company

CARROLL L. SHARTLE
Ohio State University

Comment

OPPORTUNITIES FOR NEGROES IN PSYCHOLOGY

In every state from Pennsylvania down throughout the Deep South there are a fairly large number of Negro colleges. Within these colleges one of the most neglected areas of the curriculum has been the course offerings in psychology. The usual practice is to give only those courses required for the certification of teachers. The teachers of these courses are usually members of the department of education.

Several factors are operating to increase the demand for more courses in psychology at these Negro colleges. There is also a definite attempt being made by administrators to obtain psychologists as instructors in these enlarged programs. One factor, which was evident before the war, is the general trend toward improvement of the quality of the curricula of these colleges. This is true particularly in the state colleges, most likely because of social, legal, and political pressures arising out of the segregated college systems in the southern states.

The stepping-up of the certification requirements for teachers in the elementary and secondary schools has seen greater emphasis placed upon psychology. Since the Negro teachers have to meet these certification requirements this has lead to a need for expansion of the courses offered in psychology. At the same time, the new requirements have made it necessary to expand the courses in education. This has meant that the teachers of education have less time available for "catching" the psychology courses. This influence has been further complicated by the large enrollments in education at Negro colleges. Although there is much alarm about the national decrease in the number of college students who are planning to teach, this writer feels that the national trend is not reflected (at least not to the same degree) among Negroes. It seems to be still true that teaching is one of the few fields open to relatively large numbers of college-trained Negroes in which they can gain some degree of social emancipation. These large enrollments make it necessary to have more and more sections of the required courses in education and psychology, thereby increasing the demands upon the present instructors.

In addition to the demand created by the certification requirements, the people in the departments of education are usually aware of great need for elective courses and for more intensive work in statistics and testing than can be given in the one semester course in Tests and Measurements. Furthermore, some demand for expansion of the psychology courses is coming from departments other than education. Departments of business and economics are asking for courses in Business Psychology, Personnel Administration, Salesmanship, etc. Sociology departments are asking for Social Psychology and Abnormal Psychology.

The opportunities for Negro psychologists are not limited to teaching in Negro Colleges. In several cities there are openings for school psychologists and specialists with various types of handicapped children. Several of the southern states maintain separate schools for the blind, deaf, feebleminded, and delinquents, and these schools are often in need of trained Negro personnel. As an example, Louisiana is building a school for delinquent Negro boys and is having difficulty in finding trained people for the place. Finally, there are some non-segregated concerns (especially the Veteran's Administration, private research organizations, and a few non-segregated colleges) which will hire qualified psychologists without regard to race.

The above outlines the opportunities and the need for Negro psychologists. What is the supply? To my knowledge there are only 12 Negroes who have the doctorate in psychology and one of these has since studied medicine and is practicing in that field. Their degrees were obtained at Northwestern (2), Pennsylvania (2), Columbia (2), Clark (1), California (1), New York University (1), Indiana (1), Minnesota (1), and University of Chicago (1). In addition to these Ph.D.'s in psychology there are a few Negroes with doctorates in education who have specialized in educational psychology. This writer has no idea of the number of Negroes with only Master's degrees in psychology or the number who have done work beyond the Master's degree but

have not completed the doctorate. I do know that they are difficult to locate when looking for prospective employees.

The situation in Negro colleges which was described in the first part of this note indicates one source of the lack of Negro psychologists. Howard University is the only Negro college which has a well-rounded department of psychology on the undergraduate and Master's degree levels. It is interesting to note that of the 12 Negro Ph.D.'s in psychology that I know of, five received their undergraduate training in psychology at Howard and four received their first graduate degree in the field there. Since practically all of the Negro colleges are unable to provide an adequate undergraduate major in psychology, they cannot contribute to the production of the very people they need. It is hoped that psychologists in non-segregated colleges will encourage some able and promising young Negroes to consider the possibilities in this profession.

JAMES A. BAYTON
Morgan State College

COUNTERPOINT TO A "FOOTNOTE TO MILITARY PSYCHOLOGY"

Most of us will respond sympathetically to the feeling-tone in Tyson's "Footnote to Military Psychology" in the January issue of the AMERICAN PSYCHOLOGIST, but to sympathize one does not necessarily have to nod approval of his final statement: "... the place for military psychologists is outside the Armed Forces, acting freely in an advisory capacity."

Military control is unquestionably unfavorable to the interests of a scientist as such, but does it follow that in time of war we must remain safely outside the boundaries of Command in order, by escaping it, to make the best use of our scientific orientation? For some of us the answer is diametrically opposed to Dr. Tyson's.

Civilians in a military establishment are under suspicion. The command has only limited control over them although it is held responsible for the consequences of their acts. The civilians do not "belong." They cannot issue directives nor demand assistance. It is very doubtful that a civilian as compared with a military psychologist would be afforded access to the materials on which investigations of significance would have to be based. The experience of most civilians in the services is usually even less happy than of the scientists-in-uniform. The staff psychologist may or may not have to trim his sails, but at least he is able to navigate!

It would seem possible that Dr. Tyson has underestimated the extent to which qualified scientists of whatever rank possess the power to influence their military superiors, both in matters of judgment and evaluation, and in the rendering of decisions. Our military men have many faults, as is only natural in a society normally indifferent or even hostile to their development, but if Dr. Tyson believes that they are disposed to dispute, distort, or *conceal from other men in uniform* the findings of specialists, his experience must have been different from many of the rest of us. Professional soldiers are sometimes indifferent, frequently uncritical, but rarely prejudiced in a technical sense. Unlike scientists, their training properly emphasizes the values of secrecy. In the average case the psychologist under their authority is free to work out his own salvation within the limits of command purposes, but he is not encouraged to publish. If permitted to do so he is hedged about with restrictions which may make the published account very different from an acceptable staff report. Consequently what appears in civilian journals is no measure, even in the minds of the military authorities, of the extent or quality of the psychological services in the Armed Forces. It provides no argument for or against the psychologist in uniform.

There is very real reason to doubt that it would be better to have a psychologist judge the ultimate value of military psychology than a professional military man. Many of the enthusiasms one detects in the journals today seem naïve and futile in the extreme. A glance backward over the last quarter of a century with its fads and fashions of psychological thought does nothing to support a conviction of professional stability. We would do well occasionally to submit our procedures and pronouncements to the steadying influence of external evaluation, even by the military.

War brings many evils, but to have the psychologists in the Armed Forces even if they have to work under wraps is not necessarily one of them.

The remedy for the ills of war-time military psy-

chology does not lie in isolation from the restrictions imposed by Command, but on the professional ability, integrity, and social adaptability achieved in peace by those psychologists who put on the uniform to serve in war.

IRVING C. WHITTEMORE
Boston University

THE FUTURE OF PSYCHOLOGY, OR THE GOOSE THAT LAID THE GOLDEN EGGS

All science changes its patterns to meet human demands. The need for an atom bomb hastened the development of nuculear physics with a speed that would have been impossible in peacetime. This was accomplished by recruiting all available adequate personnel to the problem, and by making available unbelievable facilities and money for advancing the project with all possible speed.

Psychology today is faced with a similar peacetime situation. During the first World War, psychologists demonstrated the usefulness of selection techniques and hence established a market for these procedures. Psychologists, in this second World War, proved their usefulness in a number of fields—in instrument design, selection, training, morale but perhaps primarily in the fields of psychological diagnosis and of psychotherapy.

This job was so well done during the war that a continuing demand was created for trained clinical psychologists, who were to work both in the Veterans Administration Hospitals and in clinics to be set up by the Bureau of Public Health throughout the country as soon as the necessary medical and psychological personnel can be obtained. This is a splendid and deserved recognition for clinical psychology. The two programs should contribute enormously to public welfare.

But it was immediately evident that there were not enough trained clinical psychologists to activate either of these programs, much less the two programs simultaneously. Hence the government initiated training programs, in a number of academic institutions, to produce the necessary trained personnel. The number of accredited institutions is rapidly increasing in order to meet the necessary quota. Indeed, some departments of psychology, which never before had given adequate training in clinical work, have now initiated such training activities.

The program initiated for training of clinical psychologists by the VA is sensibly conceived, in that it requires a thorough background of work in general, systematic and experimental psychology on which to build the subsequent structure of clinical techniques and clinical experience. The trainees are to be carried through the Doctor of Philosophy degree, and the standards for each institution for this degree are to be maintained. The program should eventually provide an adequate number of splendidly trained clinical psychologists. And furthermore, it will train clinical psychologists, psychiatrists, and psychiatric social workers to act as a team toward a common goal.

No one can question the extreme necessity of this program to meet the present emergency. The usefulness of the largely increased number of highly trained clinical psychologists cannot well be overestimated. If the experience of my own department is a criterion, the response to the Veterans Administration program has been highly encouraging. Many applications have been received from prospective students—very many more than the department could accept with our present training facilities. Hence we have been able to select, for the first group to be trained, an exceedingly satisfactory group of trainees at the graduate level. And already the department is receiving many requests for training under the Public Health Program, even before it has been initiated officially.

No one can quarrel with these applicants who seek scientific training to prepare themselves for assured jobs after their training period is completed.

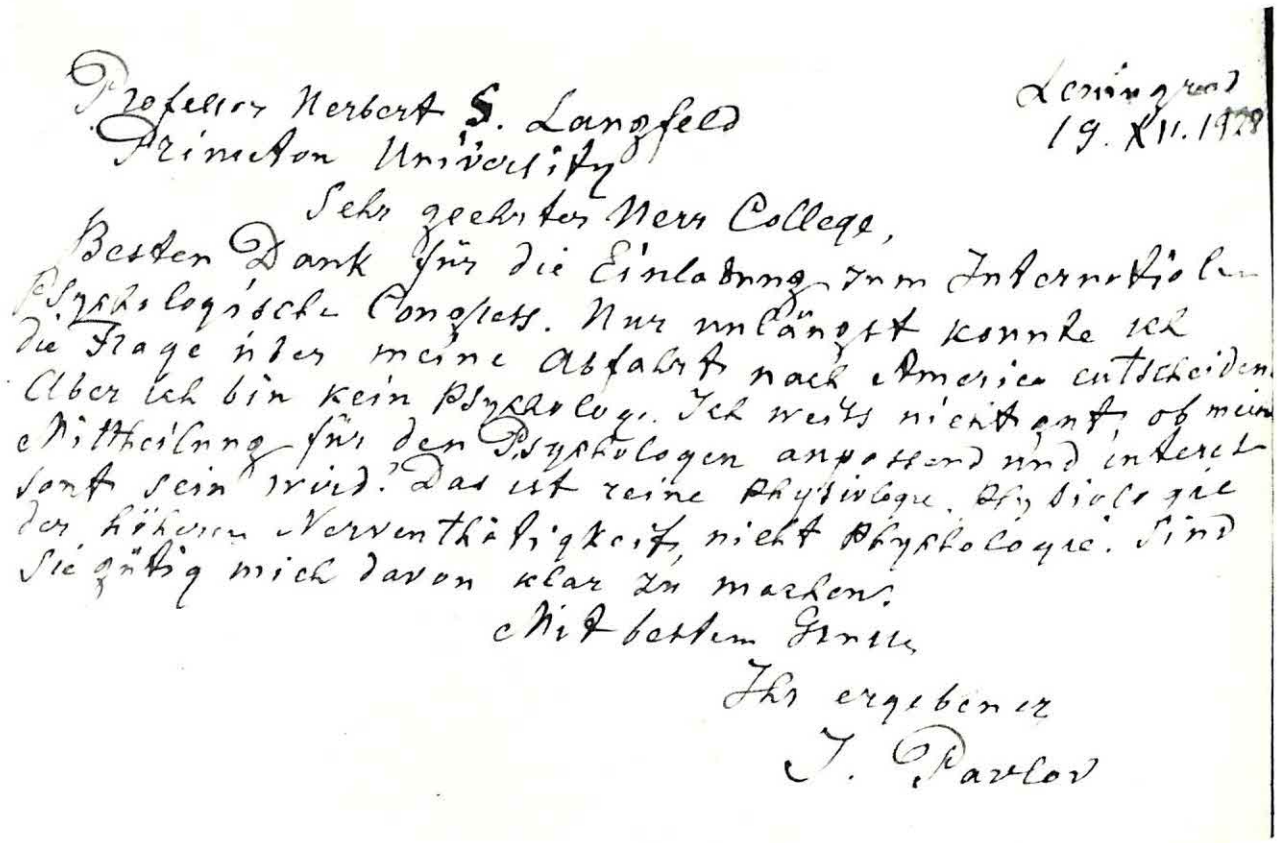
But there is one aspect of the situation which is a cause of concern. This is the amount of subsistance given these students during training and the size of the salaries promised them when they are ready to assume their professional duties. No academic institution can compete with government salaries—especially at the present time.

And what effect will this have upon the development of psychology as a science! Certainly many of the best men and women will go into the applied field for some years to come. The contribution which they will make to human welfare will motivate them as well as the assurance of jobs and the salaries

promised. This is bound to result in a reduction in the amount of strictly experimental research, which adds so enormously to the general theoretical structure of psychology. A few individuals will enter the experimental field because they are temperamentally so inclined. Others, also temperamentally so inclined, may continue strictly experimental research because they have available the necessary independent income to enable them to ignore the greater financial inducements of government training and government employment. Still others will remain in academic psychology because they are not quite good enough to get into the government program. And finally others will remain in academic work because of age or because they are already deeply rooted in their institutions.

But I repeat for emphasis the fact that these government programs at present require thorough basic training in general, theoretical and experimental psychology. If the present trend continues, will this fundamental training have to be given largely by "second raters" some fifteen years from now? And will systematic psychology advance, as it has so magnificently in the last 50 years, if scientific research is seriously curtailed. It is the systematic psychological structure which has made possible the clinical field and other applications. Pure science must come before application. If the systematic structure in psychology ceases to grow, it is doubtful if adequate application can be made beyond the present limits of the psychological system. Are we killing the goose that laid the golden eggs?

SAMUEL W. FERNBERGER
University of Pennsylvania



Professor Herbert S. Langfeld
Princeton University

Leningrad
19. XII. 1929

Sehr geehrter Herr College,

Besten Dank für die Einladung zum Internationalen psychologischen Congress. Nur unklarheit konnte ich die Frage über meine Abfahrt nach America entscheiden. Aber ich bin kein Psychologe. Ich weiss nicht ob mein Mittheilung für den Psychologen anpassend und interessant sein wird. Das ist reine Physiologie. Physiologie der höheren Nerventhätigkeit, nicht Psychologie. Sind Sie gütig mich davon klar zu machen.

Mit besten Grüssen

Ihr ergebener

I. Pavlov

PAVLOV LETTER

TWELFTH INTERNATIONAL CONGRESS OF PSYCHOLOGY

Preliminary Notice

The Twelfth International Congress of Psychology (postponed from 1940) will be held in Edinburgh, Scotland, from 23rd July to 29th July, 1948.

The Congress fee has been fixed at three pounds (£3) sterling for active members and thirty shillings (30s.) sterling for associates.

Arrangements are being made by which a large proportion of the members can be accommodated in University hostels. The inclusive charge for such accommodation, it is hoped, will not exceed £4 sterling, excluding midday lunches. Members who do not desire accommodation in the hostels will, on early application, be assisted to obtain accommodation in hotels.

When the Committee of Organization is fully constituted, formal invitations will be issued. It will, however, greatly facilitate arrangements if as many as possible will let the General Secretary know now that their attendance at the Congress is probable. In the meantime subjects for symposia, general discussion and lectures are under consideration by a Preliminary Arrangements Committee.

A volume of Proceedings of the Congress, containing abstracts of papers read, will be published, the cost of which is included in the Congress fee for active members.

JAMES DREVER
President of Committee of Organization
GODFREY THOMSON
General Secretary.
(Moray House, Edinburgh, 8.)

When plans were being made for the Ninth International Congress of Psychology, which was held in New Haven in 1929, Professor Pavlov was invited. He doubted whether his work would be of sufficient interest to psychologists to justify his coming and expressed those doubts in a letter to H. S. Langfeld which is shown on the opposite page. Professor Langfeld's free English translation reads:

"Many thanks for the invitation to the International Psychological Congress. I am finally able to decide the question about my trip to America, but I am no psychologist. I am not quite sure whether my contribution would be acceptable to the psychologists and would be found interesting by them. It is pure physiology—physiology of the functions of the higher nervous system—not psychology. Will you kindly clarify the situation for me?"

Pavlov was persuaded that he should attend. He did, and in so doing gave many Americans an opportunity to see and meet one of the great contributors to psychology. The opportunity to exchange information and ideas on an international basis, the opportunity to get acquainted with many of our colleagues in other countries will be repeated when the Twelfth International Congress convenes a year from July. That opportunity will make many American psychologists want to attend.

The Committee of Organization will probably not be able to send individual invitations to every member of the APA; those who wish to attend can therefore take this announcement as an invitation. Please inform Godfrey Thomson, the General Secretary, if you are going to attend the Congress.

Steamship passage is difficult to secure. Passage on the better liners is booked many months in advance. If you plan to attend the Congress and wish to travel by sea, accommodations should be requested just as soon as possible. Travel by air is less difficult to arrange and air accommodations can be requested somewhat later. Your local travel agent will advise you on lines, accommodations, cost, and available sailing dates.

—DAEL WOLFLE

FORMATION OF A COMMITTEE FOR THE STUDY OF ANIMAL SOCIETIES UNDER NATURAL CONDITIONS

J. P. SCOTT

Roscoe B. Jackson Memorial Laboratory

Bar Harbor, Maine

AT THE conference on Genetics and Social Behavior held at the Roscoe B. Jackson Memorial Laboratory at the end of last summer, considerable emphasis was placed on the fact that although there is widespread interest in and enthusiasm for studies of the social behavior and organization of animals in many different scientific fields, these studies are often poorly supported and do not attract the attention which they deserve. It was suggested that an informal "Committee for the Study of Animal Societies Under Natural Conditions" might serve a very useful purpose in encouraging and coordinating this type of scientific work.

The first meeting of this committee was held in New York under the auspices of the New York Zoological Society on January 31 and February 1, 1947. The primary purpose of the conference was to help organize a research program on animal behavior, particularly in connection with the New York Zoological Society's new station at Jackson Hole, Wyoming.

It was agreed that the committee should not identify itself with any one institution or project. Its organization was therefore set up on a broad basis. As a general directive for the committee's work the following resolution was passed:

> "Realizing that the study of general problems of social organization is basically important to human welfare as well as to theoretical science, and realizing also that many animal societies are in danger of extinction and need to be studied while there is a chance that they may be saved, the undersigned have agreed to form a 'Committee for the Study of Animal Societies under Natural Conditions,' whose purpose shall be to sponsor, coordinate, perform, and assist research on animal societies and to act as a liaison agency between workers in the various scientific fields involved in this research. It is agreed that the broadest possible interpretation shall be placed on the terms 'animal societies' and 'natural conditions'."

It was further agreed that the organization of the committee should remain flexible and informal, and it was decided to elect an executive secretary whose function shall be to coordinate the activities of the committee, and to elect chairmen of subcommittees to consider special research projects and conduct other activities.

At the New York meeting J. P. Scott was elected executive secretary, and C. R. Carpenter chairman of a subcommittee on the Jackson Hole Research Project. T. C. Schneirla was elected chairman of a subcommittee to make a survey of locations and institutions in which research on animal social behavior and organization is possible, and also to locate projects which need to be encouraged. A further subcommittee on Ways and Means, with Fairfield Osborn as chairman, was organized to find out where financial support for this type of research can be obtained and is available.

Besides those mentioned above the following members of the committee were present at the meeting: Alfred Emerson, Nicholas Collias, Robert K. Enders, Myron Gordon, and William Beebe. Members who were unable to attend the New York meeting include: Frank A. Beach, S. Charles Kendeigh, Walter P. Taylor, John Emlen, and John W. Scott.

Action was initiated regarding the Barro Colorado Island Biological Station, which needs to be put on a permanent basis of support as a center of tropical research.

It is hoped that the secretary's office will act as a clearing house for research ideas and projects, and as a coordinating agency between various individuals and institutions interested in this line of research. The secretary was directed to take active steps in this direction, and correspondence on these matters is invited.

Across the Secretary's Desk

PERSONNEL PLACEMENT ACTIVITIES OF THE APA

Report for the Year 1946

One of the functions of the Office of the Executive Secretary is to help psychologists find better jobs and to help employers find available psychologists. This function was taken over from the Office of Psychological Personnel which went out of existence January 1, 1946. At that time the OPP files, job requests, personnel, and activities were transferred to APA. Annual reports by the Director of the OPP have informed psychologists of the success that office had in filling job requests for psychologists (2, 3, 4). The method of operation of the present Personnel Placement service was described recently in THIS JOURNAL (1). The following paragraphs give a statistical report of the functions of 1946 and describe some of the difficulties of running a personnel placement service.

This past year has seen the transition of a wartime service to a peacetime one. Many psychologists who have been in the armed services are now anxious to take their places once again in civilian positions. GI's are returning to complete their training before accepting permanent positions. Undergraduates are asking for information concerning graduate training as well as assistantships, fellowships, or internships available in fields of their specific interests.

A summary of the record for 1943, 1944, 1945, and 1946 is given in brief in Table 1. That table shows that more job requests were received in 1946 than in any previous year, that many of these requests did not lead to actual appointments, and that fewer appointments were made of people referred by this office than in any previous year.

A total of 336 job requests was received in 1946. Only 49% of these jobs were filled. The second column shows that 11% of the positions were filled by people referred by the APA. As shown in the fourth column, no placements were made in 51% of the jobs. In some instances the need evaporated after the request had been sent. Others went unfilled because no suitable candidates were available.

Table 2 presents a breakdown of the 1946 record. It lists different kinds of psychological positions and shows the frequency with which we were asked to suggest candidates for each, the number of each kind of request in which an appointment was or was not made, and the number of times in which the person appointed had been suggested by the APA office.

TABLE 1

Summary of Job Requests and Placements

1943–1946

YEAR	NUMBER OF JOB REQUESTS	NUMBER FILLED FROM APA (OPP) LISTS	NUMBER FILLED FROM OTHER SOURCES	NUMBER NOT FILLED
1943	215	52 24%	45 21%	118 55%
1944	198	46 23%	47 24%	105 53%
1945	267	62 23%	62 23%	143 54%
1946	336	36 11%	127 38%	173 51%

TABLE 2

Analysis of Job Requests, 1946

EMPLOYER	TOTAL REQUESTS	FOR INFORMATION OR NO PLACEMENTS MADE	PLACEMENTS MADE	PLACEMENTS FROM APA REFERRALS
Colleges, universities	194	88	106	20
Industries	22	16	6	2
Schools	8	4	4	0
Clinics, guidance centers	28	15	13	4
State hospitals	24	14	10	2
Public personnel agencies	29	18	11	2
Federal agencies	21	11	10	5
Federal research	10	7	3	1
Totals	336	173	163	36

There are several aspects of the personnel placement function which do not show up in either table. Each year the office staff has held personal interviews with a number of psychologists interested in changing their positions. During the period of demobilization many psychologists who were about to

leave the Army or Navy visited the office to discuss job possibilities. The number of such interviews is much smaller now than it was in the winter of 1945–1946. However, at present the budget slashes in various government agencies are sending a larger number of psychologists to our service. These interviews sometimes give specific leads to jobs in which future appointment is made. They also provide an opportunity to discuss the job situation in general, to give information on salaries, and to help a person decide what kind of job he wants.

Another type of service not indicated in the tables is the general advice which the APA office is able to give prospective employers. More and more they are using the APA office in Washington to secure information on training standards, on the qualifications which the APA recommends for persons appointed to various positions, and on the past record of persons already under consideration for appointment.

There are several ways in which the personnel placement service could be made more effective. Both prospective employers and individual psychologists could help. Appointing officers can help by supplying as specific information as possible about the duties of a job, the salary to be paid, the characteristics desired in an appointee, and the conditions under which he will be working. Many job requests supply all this information, but some do not. Standard job request forms may be obtained from the Personnel Placement office at any time. We have received requests with no more information than: "Can you suggest someone to teach psychology next year at ———— College?" When such a request is received, time is necessarily lost in writing back to ask for more detailed information.

Appointing officers can also help by making requests as far in advance as possible. Many jobs, particularly teaching jobs, must start at a specific date. Sometimes requests come just a few days before the job is to begin. For half of the jobs with definite starting dates indicated, less than two months was allowed between the time when the job request was received and the time when the person was supposed to start work. In a third of the cases less than one month was allowed. One request was made by telephone on a Saturday afternoon asking if we could supply an instructor to start the next week. We did. But that was a single case. Considerably more time is normally required and should normally be expected.

Some employers seem to think that we keep a file of job-hungry psychologists ready to send out on a few hour's notice. Two days before the September APA meeting we received a telegram asking if we could have eight or ten prospects for the chairmanship of a psychology department ready to be interviewed at Philadelphia. We did not have that many qualified candidates registered.

But the fault is not all with the employer. Psychologists who register with this office and ask for help in finding new positions are also responsible for some of the ineffectiveness of the service. It is altogether too common for a person to register, get a new position, fail to inform us, and then not bother to answer letters of inquiry coming from prospective employers to whom we have given his name. Last fall we wrote to every person registered saying that if they did not inform us that they wished to be suggested for further positions, we would remove their names from the active placement file. This cut our file from 237 to 125 registrants.

Another difficulty is the fact that the number of registrants is small. There are few psychologists who would not accept better positions than the ones they now have. If we have their names and credentials on file we could suggest them when suitable openings are referred to us. We frequently have to reply to a job request with the statement that no suitable person is in our file. Since last fall the total number of registrants has doubled, but that is not enough to allow us to answer each of 336 job requests with a carefully selected list of qualified applicants.

In general we receive more requests for lower ranking academic jobs than for the higher ranking ones. However, higher ranking positions are not absent from the list of job requests. The greater percentage of unfilled jobs has been in the fields of industry, research, state institutions, public personnel agencies, and various federal agencies. There are continued calls for people to fill these positions. Some of the positions for which we were unable to suggest acceptable candidates are listed below.

In a Midwestern university three positions are available: associate professorship at $4200–4500; assistant professorship around $3750; and an instructorship

around $3000. Should have training in general and experimental.

Young, experimental psychologist for opening in Color Control Department of an eastern company to design, supervise, and administer visual experiments and tests. Salary commensurate with training and experience.

Mature psychologist (30–40 years of age) to head student counseling program in University College, Ph.D., competent in testing, knowledge of industry and occupations. Rank of associate or full professor. Salary: $5000.

Man trained in social psychology for key position in research development department whose function is to devise new techniques and make statistical studies of experimental data in order to improve services to motion picture industry. Research ability and training in statistical methods required.

Federal agency needs specialist for Counseling, Pupil Personnel, and Student Work Programs. Ph.D., with outstanding competence, leadership, and concern for improved organization and administrative management. Salary: $7102.20.

One way to be considered for such positions is to register with the APA office. We invite psychologists to register with this office in order that their names may be referred to prospective employers who are looking for qualified candidates. Standard registration forms may be obtained from Personnel Placement, American Psychological Association, 1515 Massachusetts Avenue N. W., Washington 5, D. C. —ENID S. LEY

REFERENCES

1. BOUTHILET, LORRAINE Personnel Placement in the APA. *Amer. Psychologist*, 1946, 1, 408–409.
2. MARQUIS, D. G. The Office of Psychological Personnel Report for the Year 1943. *Psychol. Bull.*, 1944, **41**, 246–252.
3. MARQUIS, D. G. The Office of Psychological Personnel Report for the Year 1944. *Psychol. Bull.*, 1945, **42**, 225–229.
4. MARQUIS, D. G. The Office of Psychological Personnel Report for the Year 1945. *Amer. Psychologist*, 1946, 1, 346–348.

1947 APA ELECTION BALLOT

The 1947 APA election ballot will soon be mailed to all members. By order of the Council of Representatives, short biographies of each candidate will appear on the ballot. At this time it seems conservative to predict that: (1) the 1947 ballot will be a small book or large pamphlet; (2) voting will appear to be such a task that many members will not fill out the ballot; (3) but, surprisingly enough, the staff members engaged in preparing the biographies (with the aid of a list of 77 abbreviations) think them not a bad idea.

May we point out that not all of the book is to be filled in by any one voter. For example, a person living in Chicago who belongs to Divisions 5 and 12 will vote only for the President-Elect of the APA, for officers for Division 5, and for officers for Division 12.

We hope that APA members understand that of all people concerned, the Election Committee and the APA office would be most willing to shorten the ballot.—DAEL WOLFLE

Psychological Notes and News

JOHN B. GEISEL, Director of the Southard School, Topeka, Kansas, died in September 1946 at the age of 40 years. Previously he was the principal of the Orthogenic School of the University of Chicago.

WILLIAM MOULTON MARSTON died at the age of 53 years in Rye, New York.

It was announced in error in the April AMERICAN PSYCHOLOGIST that CARL L. ANDERSON had been appointed Assistant Branch Chief Clinical Psychologist at the VA Hospital in Memphis. Dr. Anderson was *formerly* in Memphis in this position. He has now been appointed Assistant Branch Chief Clinical Psychologist at Branch Office No. 4, Richmond, Virginia.

FRANK A. PATTIE, assistant professor of psychology at Rice Institute, Houston, has been appointed head of the department of psychology at the University of Kentucky as of July 1, 1947.

EDWARD M. L. BURCHARD and WILLIAM J. E. CRISSY have joined the department of psychology of Queens College as assistant professors.

CHARLES N. COFER, department of psychology, George Washington University, has accepted a professorship at the University of Maryland, beginning September 1947.

DR. EUGENIA BREUKERS of Maastricht, Holland, is in this country for about six months visiting universities and research stations interested in child development.

ELOISE CHUTE has been awarded a research fellowship in clinical psychology at the University of Pittsburgh.

STEVENSON SMITH of the University of Washington, Seattle, is now in Honolulu, conducting a research program on the anthropological differences of race groups. He will return to the University of Washington in August.

NATHAN M. GLASER is now the chief psychologist at the Chicago Jewish Vocational Service Bureau.

ARNOLD GESELL and WOLFGANG KÖHLER have been elected to the National Academy of Sciences.

LLOYD N. YEPSEN is a member of a research committee of three which is studying the human factor in fire prevention as an outgrowth of the President's Conference on Fire Prevention.

ELIZABETH D. MCDOWELL has accepted an appointment as psychologist at the State Board of Children's Guardians, Department of Institutions and Agencies, New Jersey.

The Committee on Graduate Training in Clinical Psychology, DAVID SHAKOW, chairman, will sponsor a two-day workshop on training curricula in clinical psychology on Sunday and Monday September 7 and 8 in Detroit, immediately preceding the annual meeting of the APA. The workshop will be primarily for the training institutions accredited by the APA to give training to the doctorate in clinical psychology. It is hoped that at least one representative of each of these universities will attend. Officials of the VA and USPHS, as well as other persons concerned, will also be present. Further details concerning this workshop will be published in a subsequent issue of the AMERICAN PSYCHOLOGIST.

ADAM PORUBEN, JR., formerly research psychologist with the Encyclopaedia Britannica Films, Inc., is now personnel psychologist in the Personnel Division of the Metropolitan Life Insurance Co., 1 Madison Avenue, New York City.

STEUART HENDERSON BRITT has been appointed to the Editorial Board of the *Journal of Marketing*, official publication of the American Marketing Association.

WILLIAM G. GLENN, director of the Testing and Advisement Center, New York University, has been awarded the Army-Navy Distinguished Service Medal from the Chinese Government. The citation reads in part as follows: "For exceptionally meritorious services to the Government of the Republic of China as Chief Psychologist and Personnel Placement Officer of Friendship Project from August 1943 until the surrender of Japan."

NAOMI STEWART has left the Personnel Research Section of the AGO and is now with the Cooperative Test Service of the American Council on Education as head of the Department of Test Research and Development. She is also teaching two statistics courses in the Graduate School of New York University.

J. E. WALLACE WALLIN will teach graduate courses on mental retardation and hygiene at Duke University's summer session.

At the meeting of the Midwestern Psychological Association, May 1–3, at the Edgewater Beach Hotel, in Chicago, it was announced that HARRY F. HARLOW is the new president, and ROBERT R. SEARS, the new member of the Council. In 1948 the MPA will meet in St. Paul, Minnesota on May 7 and 8.

The next meeting of the Eastern Psychological Association will be at Temple University, Philadelphia, April 16–17, 1948. The newly elected officers of the EPA are: J. McV. HUNT, president; HAROLD G. SEASHORE, secretary; WESTON BOUSFIELD, treasurer; and O. HOBART MOWRER and HELEN PEAK, directors. These elections took place at the meeting held in Atlantic City, New Jersey on April 25–26.

A conference, initiated by a committee of the Home Economics Section of the Association of Land Grant Colleges and Universities, and co-sponsored by the Research Committee on the Textile and Clothing Division of the American Home Economics Association, was held at Teachers College, Columbia University on March 10–16. Specialists in the fields of textiles and clothing, sociologists, psychologists, and business economists met to discuss the problems of clothing as related to the social sciences and to explore the possibilities of undertaking needed research. The psychologists attending the conference were GEORGE HARTMANN, GEORGE GALPHIN, ELIZABETH HURLOCK, and RUSSELL C. SMART.

Psychological Associates is a new group which plans to offer the city of Washington, D. C. various psychological services. They are now ready to accept referrals. The present staff consists of CHARLES N. COFER, VICTOR FIELDS, HOWARD GOHEEN, SAMUEL KAVRUCK, and JOHN WM. MOLYNEAUX.

The Alto Psychologic Center, San Francisco, has re-organized its vocational work into the Vocational Counseling Service, a non-profit corporation. CATHERINE AUGUSTINE has been appointed senior psychological assistant in charge of the testing division.

C. RAYMOND HEADLEE, SADIE MYERS SHELLOW, RHEA R. HILKEVITCH, and BEN SULLIVAN have organized a consulting agency under the title *Psychological Services*, in Milwaukee, Wisconsin.

A workshop on Audio-Visual Materials in Teacher Education, sponsored by the Association for Student Teaching, the School of Education, and the Audio-Visual Center, is being held on August 19–28 at the University School, Indiana University. Its purpose is to provide an opportunity for cooperative effort by educators interested in improving teacher education through the use of audio-visual materials. The registration fee is $5. Address Dr. L. O. Andrews, School of Education, Indiana University, Bloomington.

The Allegheny Vocational Counseling Center, Pittsburgh, has completed its first year as a community agency offering vocational testing and counseling to individuals, schools, social agencies, business, and industry. The Center has a staff of 12 including DORA F. CAPWELL, director; LOUISE W. GATES and J. R. PORTER, counselors; CAMPBELL MOSES, part-time physician; DOROTHY HULMER, chief examiner; MAHLON V. TAYLOR, JR., research associate; and O. M. TAYLOR, research assistant.

The College Entrance Examination Board announces the publication of the first issue of *The Col-*

lege Board Review, edited by HERBERT S. CONRAD, EDITH M. HUDDLESTON, and JOHN W. FRENCH. The *Review* will appear three times yearly, and will include research articles, news notes, and announcements. It is available to interested persons without charge. Those wishing to have their names placed on the mailing list should write to Mrs. Catherine G. Sharp, Circulation Manager, Box 592, Princeton, New Jersey.

The April AMERICAN PSYCHOLOGIST announced publication of the new journal *Behavior, an international journal of comparative ethnology*. The last word should have been ethology.

Feeling that the work of the Social Science Research Council can be effective only to the degree that it is known to social scientists, the Council has started a new bulletin, *Social Science Research Council Items*, which reports current activities of the Council. It will be published quarterly or oftener if it is found to fill a need.

The Psychological Institute of the University of Vienna, including its library, was almost completely destroyed during the war. Classes in psychology have been resumed and are overcrowded. The first number of a new journal, *Wiener Zeitschrift für Philosophie, Psychologie, and Pädagogik*, is soon to be published. HUBERT ROHRACHER, formerly of the University of Innsbruck, is now chairman of the Institute. He has written to EGON BRUNSWIK saying that recent American literature is almost unavailable and that books and reprints sent to him or the Institute are very welcome.

Innsbruck's department is headed by ERISMANN and that at Graz is soon to be re-opened.

The Division on Maturity and Old Age has now adopted its by-laws. Its present membership is made up largely of those who signed the original petition for formation of the division. Others who wish to join should write to Dr. Harvey Lehman, Department of Psychology, Ohio University, Athens.

The Audio-Visual Aids Committee of the APA has considered repeatedly the questions of (1) how to collect, edit and make available existing historical films, and (2) how to promote production of film records of individuals and events of current or future significance.

It has been suggested that the Psychological Cinema Register of the Pennsylvania State College serve as a depository for historical films until ways and means can be found to edit and distribute them. The management of the Psychological Cinema Register has agreed to accept this responsibility. Therefore, individuals or organizations and institutions possessing films of historical merit are invited to send originals, preferably, or prints to the PCR at State College, Pennsylvania for examination, classification, storage, and eventually for editing and distribution. Thus, it is hoped that valuable film records may be saved and later utilized.

The Council of the Society for the Psychological Study of Social Issues has voted to establish a Lewin Memorial Award to commemorate the work and character of Kurt Lewin. The exact nature of the award is to be determined by a committee appointed by President LIKERT and composed of GORDON W. ALLPORT, RONALD LIPPITT, THEODORE M. NEWCOMB, EDWARD C. TOLMAN, and DONALD W. MACKINNON, chairman.

This committee is now soliciting funds for the endowment of the award. They hope to establish the Memorial on a permanent basis which will make possible the granting of an annual award. People who are interested are asked to send their contributions to Dr. D. W. MacKinnon, Bryn Mawr College, Bryn Mawr, Pennsylvania.

It is requested that people interested in securing colored papers for laboratory experiments write to Dr. Forrest L. Dimmick, Visual Research Section, U. S. Naval Medical Research Laboratory, U. S. Naval Submarine Base, New London, Connecticut. He has found an engraver who will produce them if there is a sufficient market.

The Wayne County Civil Service Commission is announcing a nation wide examination for the position of Psychologist 1, paying $3510 to $3990 a year. The purpose is to obtain a list of candidates to fill present and future vacancies in a mental hospital, a child guidance clinic, and a training school for re-

tarded children. Requirements are an MA and at least one year's experience in the clinical field. For those interested in work leading to the Ph.D. in clinical psychology, the University of Michigan and Wayne University offer opportunities. For further information write the Wayne County Civil Service Commission, 2200 Barlum Tower, Detroit, 26, Michigan.

The University of Iowa has received a grant of $62,400 from the Rockefeller Foundation for a five-year research project on cultural determinants of personality development in children. The project will be under the direction of Robert R. Sears, Director of the Child Welfare Research Station. The research staff will include Vincent Nowlis, anthropologist John W. M. Whiting, author of *Becoming a Kwoma*, another anthropologist yet to be appointed, and a research psychologist in the field of personality development and dynamics. Applications from recent Ph.D.'s for the latter position are welcome. The position is a research one and carries the rank of instructor; teaching of a graduate seminar is optional. The salary, on a twelve months basis, is $3000–3600, depending on the amount of research experience. Three halftime research assistantships are also available; graduate students having at least one year's experience in experimental, social or child psychology are invited to submit applications.

The department of psychology of the University of Alabama has two openings for next fall. One is for an assistant professor with broad training in clinical psychology. The second is an instructorship. A Ph.D. is not a requirement provided the applicant intends to complete this work within a reasonable time. Applicants should write to Dr. Oliver L. Lacey, Department of Psychology, University of Alabama, University, Alabama.

The Lynchburg State Colony, Colony, Virginia, announces an opening for a senior psychological intern on July 1, 1947. Candidates must be psychology majors with at least an MA and preferably a Ph.D., who are recommended by the head of the department of psychology of the college or university that granted the last degree. The term of the internship is one year and the stipend is $1200, plus board, room and laundry, and two weeks vacation. The senior internship is designed to give the intern sufficient training to make it possible for him to secure a position as a competent clinical psychologist.

The Greenwich Public Schools, Connecticut, have an opening for a clinical psychologist to work in their child guidance and adjustment program. An MA with at least one year of internship or equivalent supervised training is desired. Inquiries should be addressed to Elmer R. Hagman, Director Research and Guidance.

The Regular Army needs professional personnel in the areas of psychiatric social work and clinical psychology. The closing date for applications for Regular Army commissions has been extended to July 31, 1947. Appointments will be made in grades from 2nd Lieutenant through Major. Further information can be secured from the commanding general in the area in which you live.

Application for Student Affiliate classification in the APA may now be made at any time. If applications are received before September 1, they will be dated from January 1; those received later will be dated January 1, 1948. Student affiliates (graduate students and undergraduates majoring in psychology or related fields) receive the *Psychological Abstracts*, the AMERICAN PSYCHOLOGIST, and the annual *Yearbook*. Dues are five dollars. Student affiliates may subscribe to the *Psychological Bulletin* for $1.50 a year. An application and endorsement blank may be secured by writing to the Executive Secretary, American Psychological Association, 1515 Massachusetts Avenue, Washington 5, D. C.

It is suggested that reservations for the 1947 meeting of the APA be made as soon as possible. Room reservations may be made by writing directly to the hotels listed in the April AMERICAN PSYCHOLOGIST. People who are interested in nursery school facilities for their children during the meetings should inform Edward T. Raney, Michigan State Employment Service, Detroit, Michigan.

Convention Calendar

AMERICAN PSYCHOLOGICAL ASSOCIATION

September 9–13, 1947; Detroit, Michigan
For information write to:
Dr. Dael Wolfle, American Psychological Association
1515 Massachusetts Avenue, Washington 5, D. C.

WESTERN PSYCHOLOGICAL ASSOCIATION

June 19–20, 1947; San Diego, California
For information write to:
Dr. Lester F. Beck, Department of Psychology
University of Oregon, Eugene, Oregon

SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

March 25–27, 1948; Atlanta, Georgia
For information write to:
Dr. Joseph Weitz, Newcomb College, Tulane University
New Orleans, Louisiana

MIDWESTERN PSYCHOLOGICAL ASSOCIATION

May 7–8, 1948; St. Paul, Minnesota
For information write to:
Dr. Claude E. Buxton, Department of Psychology
Northwestern University, Evanston, Illinois

EASTERN PSYCHOLOGICAL ASSOCIATION

April 16–17, 1948; Temple University, Philadelphia
For information write to:
Dr. Harold G. Seashore, Psychological Corporation
522 Fifth Avenue, New York City

ROCKY MOUNTAIN BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Date to be announced; Colorado State Teachers College, Greeley, Colorado
For information write to:
Dr. Lillian G. Portenier, University of Wyoming
Laramie, Wyoming

INTERNATIONAL COUNCIL OF WOMEN PSYCHOLOGISTS

September 11, 1947; Detroit, Michigan
For information write to:
Dr. Mildred B. Mitchell, Mental Hygiene Clinic
Fort Snelling 11, Minnesota

NATIONAL COMMITTEE FOR MENTAL HYGIENE

November 12–13, 1947; Hotel Pennsylvania, New York
For information write to:
National Committee on Mental Hygiene
1790 Broadway, New York 19, New York

A new approach to the psychology of socialization

THE PSYCHOLOGY OF EGO-INVOLVEMENTS

Social Attitudes and Identifications

A practical, imaginative, factual study, presenting the broad outline of the psychology of socialization. Correlates heretofore disconnected observations, tracing the growth of the ego in childhood and its re-formation in adolescence. Discusses the effects of collective behavior on the individual, ego-involvements in literature, and the ego in psychoanalysis.

By
MUZAFER SHERIF,
Professor of Psychology, University of Ankara, Turkey
and
HADLEY CANTRIL,
Professor of Psychology, Princeton University, and Director of the Office of Public Opinion Research

Copies available on approval.

May 1947
526 pages 6 by 9¼ $6.00

JOHN WILEY & SONS, INC. 440 FOURTH AVENUE, NEW YORK 16, N. Y.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 July, 1947 Number 7

In this Issue

Society of Experimental Psychologists 223

Industrial Psychology as Management Technique and as Social Science: ARTHUR KORNHAUSER 224

Psychological Writing, Easy and Hard: S. S. STEVENS AND GERALDINE STONE 230

Psychologists' Finances: HELEN WOLFLE 236

The New Harvard Psychological Laboratories: S. S. STEVENS AND E. G. BORING 239

Comment 244

Recommendations to the National Commission for UNESCO 244

A Proposal for a Code of Ethics for Professional Psychologists 246

Across the Secretary's Desk 247

Psychological Notes and News 248

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

Princeton Bicentennial, April 9 and 10, 1947

Reading from left to right: *Bottom row*—D. G. MARQUIS, J. P. NAFE, C. L. HULL, H. S. LANGFELD, J. F. SHEPARD, S. W. FERNBERGER, F. C. BARTLETT, E. G. BORING, H. P. WELD, A. T. POFFENBERGER, L. CARMICHAEL, AND W. R. MILES.

Second Row—H. W. NISSEN, J. Volkmann, J. J. GIBSON, W. A. HUNT, F. A. BEACH, B. F. SKINNER, E. G. WEVER, K. S. LASHLEY, W. KÖHLER, W. S. HUNTER, H. SCHLOSBERG, H. F. HARLOW, AND E. R. HILGARD

Third Row—C. W. BRAY, C. LANDIS, S. S. STEVENS, E. B. NEWMAN, F. A. GELDARD, C. P. STONE, C. T. MORGAN, C. I. HOVLAND, K. W. SPENCE, F. W. IRWIN AND H. HELSON

Top Row—J. G. BEEBE-CENTER, W. J. BROGDEN, D. B. LINDSLEY, AND C. H. GRAHAM

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, *Sampson College.* Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

Princeton Bicentennial, April 9 and 10, 1947

Reading from left to right: *Bottom row*—D. G. Marquis, J. P. Nafe, C. L. Hull, H. S. Langfeld, J. F. Shepard, S. W. Fernberger, F. C. Bartlett, E. G. Boring, H. P. Weld, A. T. Poffenberger, L. Carmichael, and W. R. Miles.

Second Row—H. W. Nissen, J. Volkmann, J. J. Gibson, W. A. Hunt, F. A. Beach, B. F. Skinner, E. G. Wever, K. S. Lashley, W. Köhler, W. S. Hunter, H. Schlosberg, H. F. Harlow, and E. R. Hilgard

Third Row—C. W. Bray, C. Landis, S. S. Stevens, E. B. Newman, F. A. Geldard, C. P. Stone, C. T. Morgan, C. I. Hovland, K. W. Spence, F. W. Irwin and H. Helson

Top Row—J. G. Beebe-Center, W. J. Brogden, D. B. Lindsley, and C. H. Graham

INDUSTRIAL PSYCHOLOGY AS MANAGEMENT TECHNIQUE AND AS SOCIAL SCIENCE[1]

ARTHUR KORNHAUSER

Columbia University

Industrial psychology is potentially one of the broadest and most significant divisions of psychology. In practice, however, it has developed predominantly as a management technique. Rarely is the research activity conducted from *society's* standpoint.

No invidious distinction is intended. Improvement of management procedures can be enormously valuable. Nor is it suggested that the two types of development are opposed. The title of the paper is "industrial psychology as management technique *and* as social science"—not management technique *versus* social science.

PSYCHOLOGY FOR MANAGEMENT

Industrial psychology as management technique is well known and highly successful. It includes all the psychological work that is done to assist business management in solving its human problems. The industrial psychologist is hired by employers and merchants to help them deal more effectively with their employees and customers. In the main, this has meant work on immediate, more or less technical problems. It has meant employment testing, consumer surveys, job evaluations, rating systems, supervisory training courses, job training techniques, employee attitude polls, improvement of work processes and surroundings, measurement of advertising effects, and many similar research and service functions.

These management uses of psychology are important and greatly needed. When the work is technically competent and in accord with decent professional ethical standards, I think all of us would say "the more the merrier." With or without our blessing, there is little doubt that "corporation psychology" will continue to flourish. Managements' needs and desires being what they are, and psychologists' attitudes toward ample financial rewards being what they are, the result is pretty well assured.

INDUSTRIAL PSYCHOLOGY AS SOCIAL SCIENCE

Meanwhile industrial psychology as *social science* remains a puny infant—if not, indeed, still in embryo. The problem is serious. All over the world, men struggle to reconcile the demands and the strains of modern industry with a humanly satisfying way of life. Widely and persistently, the conflicts between the working people of industry and the owners and managers of industry disrupt or threaten our social unity and stability. The human problems of industry and economic relationships lie at the very heart of the revolutionary upheavals of our century. One might expect industrial psychologists to be fired by the challenge of these issues. But most of us go on constructing aptitude tests instead—and determining which of two advertising slogans "will sell more of our company's beauty cream."

The contrast is not between pure and applied psychology. The social research under discussion also aims at useful applications. Nor is the difference that between *social* psychology and other branches of psychology. The methods and conclusions of social psychology may be employed either in improving management procedures or in the socially oriented applications. The same is true, of course, of experimental psychology, clinical psychology, psychometrics, and other subdivisions of our science.

The essential contrast has to do with who *controls* the research, and to what ends. *Do we work on the problems of the private businessman, or on the problems of society?*

While the dividing line between management technique and social science is blurred, the dichotomy is useful as a way of pointing to the fact that the management approach leaves out much that is important

[1] This is a revised form of a paper read at the annual meeting of the New York State Association for Applied Psychology, February 1, 1947.

in industrial psychology and that it imposes certain characteristic viewpoints and limitations.

LIMITATIONS OF THE MANAGEMENT APPROACH

For one thing, industrial psychology for management tends to concentrate on restricted and short-run research undertakings. Management pays for research which promises to yield definite returns. It wants answers to concrete, practical problems, usually pretty immediate ones.

Certainly there are exceptions. Some psychological work conducted for corporations does extend far into the territory of "social science." For example, the elaborate Hawthorne research program of Western Electric Company, the work of Kurt Lewin's students at Harwood Manufacturing Company, studies in which others of us have attempted to draw general conclusions regarding workers' feelings and attitudes, all illustrate the way management research may at the same time broaden existing knowledge of human relations in industry. This can scarcely be claimed, however, for more than a very small fraction of management sponsored psychological work.

But psychological activities for industry, in addition to being typically rather narrow and immediate, are subject to an even more distinctive limitation. They are characterized by the fact that business management constitutes a special interest group which manifests its special viewpoint in respect to research as in other matters. Certain areas of research are tabu. Certain crucial variables must not be dealt with. We must avoid explicit analysis of the broad and basic problems of *power and authority* in economic life. Management's prerogatives are not to be tampered with; studying them might reveal needed changes or concessions. Likewise the motives and private attitudes of top executives are sacrosanct. Research is usually steered away from all such matters. They are dangerous.

For a socially oriented industrial psychology, however, it is these very areas that are of utmost importance.

In mentioning these facts, there is no thought of *blaming* business men. Labor unions or other special interest groups would no more willingly sponsor research that might boomerang or be uncomfortable. No group cares to support investigations that it fears may be used in bringing changes to which it is opposed.

THE NEED FOR A SOCIAL APPROACH

But for society as a whole—and for independent psychologists—business management's type of industrial psychology, however useful and defensible, is not enough. The *basic* problems cry for solution. Whether under private capitalism or some other economic system, the next decades have somehow to steer or muddle their way to answers. It may be that psychologists and their fellow social scientists can do very little. But it *may* be that they can help mightily. Without trying, we shall never know.

The emphasis of what we are calling industrial psychology as social science is on the broad, long-run, socially significant problems. While not nearly all industrial psychological work done under non-business auspices qualifies, such research at least has greater *opportunity* to bite into these larger questions. For example: What are the strains and the long-run effects which specialized machine processes and assembly lines impose on factory workers? What do unemployment and job insecurity mean in the personal development of working people and their children—and what do they mean to their social and political views, particularly in a period of world-wide Socialistic, Communistic, and Fascist bids to displace private capitalism and to provide security? What are the possibilities and the limitations of democratic social participation within industrial units whose structure remains essentially autocratic? What changes in the government of industry are necessary in order to develop working relationships that are humanly satisfying as well as productive? Do men in top positions of power in industry genuinely believe in democratic participation by working people? What influences, positive and negative, are exerted by labor unions on the personal development and adjustment or working people? What fundamental psychological principles of sound administration and peaceful adjustment of group conflict can be formulated? One could continue indefinitely with a list of such questions.

The important point here is that psychologists pay so little attention to them. The challenging task is to translate these transcendently big issues into research programs. But short of entire programs, even a nibble here and there is a beginning, a move in the right direction.

FIRST STEPS HAVE BEEN TAKEN

There are enough of these initial gropings to indicate that an industrial psychology on a social science level may be in the making. These small moves out on the fringes of what we think of as industrial psychology are potentially the most significant of new developments in the field. If vigorously pursued, they would soon overshadow all specific technical advances for management. What is of paramount importance is the problems we choose to work at.

Mere mention of a few examples will indicate the beginning that has been made on these broader problems. One line of work is well represented by Wyatt's studies under the British Industrial Health Research Board. Through the 20's and 30's he and his associates conducted a long series of inquiries and experiments on repetitive factory operations, studying the effects of such work, its psychological characteristics, and the conditions which help or hinder it. Several German investigators in the 20's carried on related studies.

Elton Mayo's trail-blazing work is well known. More than anyone else, he has emphasized the broad social background factors and the subtle personal needs and emotions which determine working relationships, and the vast significance of informal organization on the job.

The M.I.T. group, following leads laid down by Dr. Lewin and Dr. McGregor, has been working intensively on the dynamics of relationships within groups, in industry and elsewhere. How is democratic group participation fostered? How do group discussions and decisions affect the spirit and performance of the group members? What are the problems and the characteristics of effective industrial leadership?

In a quite different direction, Dr. Shartle at Ohio State University is tackling the problem of "administration." He is analyzing the activities of administrators in varied types of organizations including labor unions, cooperatives, and business concerns.

Other psychologists have investigated union-management conflicts and cooperative arrangements, studied unemployed people, and carried on community attitude surveys among workers and specialized inquiries among labor leaders and particular occupational groups.[2]

In these last years, sociologists and anthropologists have been more active in these matters than have psychologists. In fact, these disciplines bid fair to push ahead alone on studies in which psychologists should surely share. "Should" share, that is, because we can contribute distinctively, if only we get going. The sociological and anthropological work includes the industrial aspects of community studies by Lynd, Warner, and others; investigationsof the human side of labor relations in the research centers at Chicago, Harvard, and Yale (notably by Gardner and Whyte at Chicago, Roethlisberger and Selekman at Harvard, and Bakke at Yale); intensive studies of white collar workers by C. W. Mills at Columbia, and so on.

I am not offering any of this work as more than an encouraging start. Nearly all of the psychological studies, and many of those by other social scientists as well, fail utterly to deal with "class" and power relations. Enthusiastic accounts of employer-employee "cooperation" or of employee "group decisions" within particular companies at particular times, for example, seem a little remote from the larger context of big business, big unions, and their struggles for security, power and advantage. Cooperation and participation may appear to be neat solutions while employees are weak and leaderless—or when the employer is the underdog; glowing conclusions, however, should certainly be postponed until the implications are examined under more typical and varied circumstances and over longer periods—during downswings in business as well as in prosperous periods, for example. We can be seriously misled by specially favorable "pretty cases." A reminder is constantly in order that the most outstanding and widely acclaimed study of labor-management relations by social scientists is reported in the year 1939 in a fat volume in which labor unions are not once mentioned.

A PROPOSED PROGRAM OF ATTITUDE STUDIES

One of the most promising and socially important research areas of all has been almost completely neglected by psychologists. I refer to broad-gauge *atti-*

[2] Good examples of such material may be found in *Industrial Conflict: A Psychological Interpretation*. New York: 1940. (First Yearbook of the Society for the Psychological Study of Social Issues. Ed. by G. W. Hartmann and T. Newcomb)

tude and opinion studies bearing on labor relations. The possibilities can be illustrated by considering how the ordinary employee attitude survey for management would be changed if its purpose were no longer to suggest short-run measures for management's use in increasing employee loyalty and morale in the particular company, but rather to help provide a basis for wise social policy regarding industrial work and labor relations.

The usual employee morale survey deals only with things liked or disliked about the work, the company, and relations on the job. The industrial group is studied in the artificial isolation of the shop. Nothing about home and family, or friends and social life; nothing about problems as consumers; nothing of the economic, social, political pressures affecting the employees; nothing about labor unions or "class" feelings; scarcely anything regarding personal aspirations and frustrations, social outlook and expectations.

A program of socially oriented attitude studies needs to go into all these matters. Moreover, the investigations cannot be limited to employees; employers and all other groups involved in industrial relations must also be studied. What do the different groups basically want in their economic relations? What attitudes and beliefs do they hold that are in conflict and what ones furnish a basis for cooperative and peaceful industrial adjustments? And what factors account for the opposed views? How closely are they associated with contrasting socio-economic positions? How closely with differences in personal background and with vocational and social adjustments? These are the central questions for the proposed type of research to tackle.

It is particularly important to determine the pressures for industrial change and the rigidity of the resistance to such change. This refers above all to changes in the distribution of economic power and changes in the direction of increased social control of industry. Specific attitude questions about working conditions and standards of living, labor union practices, anti-strike laws, private property rights, management prerogatives, depressions and unemployment, opportunities for personal advancement and for participation, satisfactory and unsatisfactory features of everyday life, as citizens, consumers, community members—all such questions would have their chief significance in the light they might throw on the fundamental issue: What changing demands do the attitudes imply concerning the way industry is run? What are the resistances to such change? And how intense and insistent are the feelings? How crystallized or fluid? How extreme?

If economic power relations are changing—and how can anyone doubt the fact—the problem of democratic society is to bring those changes as deliberately, rationally, and peacefully as possible. Far-sighted attitude studies should contribute to that end. We need to obtain information which will help clarify the conflicting and the common aims of major groups in their relations to industry and thus serve to augment mutual understanding. If groups and their leaders can gain a truer view of what they themselves stand for and want, and what others want, the air is to that extent cleared. Further clarification, compromise and concession can proceed from there—along with efforts to educate and to change the views which are in disagreement.

This is not the place to describe procedures and specific designs for such studies. A few brief notes will suffice.

Initial investigations can probably best be conducted in selected medium-sized industrial cities, each containing a few principal employing companies. Information and attitudes would be obtained in each community by means of informal and semi-formal interviews.

The sampling should be on a community-wide basis, systematically covering all income and occupational levels, with special care to reach even small groups that stand in important relationship to labor-management problems. The respondents would include rank and file workers of the various companies, the several levels of management, middle class business and professional people, political figures, union leaders, key policy-makers in local corporations and banks. What is crucial is the picture these groups have of their own positions of power and security, or their lack of these, and their feelings regarding the direction and amount of change they will fight for or tolerate.

At the same time, it would be extremely important to determine the attitudes and views of influential persons outside the community who have specially intimate relations to local affairs. These would include absentee owners of business, big city financial institutions with local interests, dominant suppliers

and customers of local industries, and regional and national labor union officials.

The interviews should be planned to ascertain not only attitudes in respect to labor relations and surrounding issues, but likewise to secure information about the individuals themselves and the influences impinging upon them which help explain their discordant views. The explanatory conclusions would be drawn in part from the respondents' own subjective reports of the reasons for their attitudes (and from critical interpretations of this subjective evidence) and in part from analyses of the objective and subjective correlates of the divergent views held.

The correlational factors are to be obtained not only in the interviews (facts about schooling, early home life and relations to parents, job history, the person's relevant information, beliefs and expectations, current and past satisfactions and frustrations . . .) but also by means of independent investigation in the community and from testimony regarding historical and current influences. For example, employees of different companies can be compared in the light of ascertainable facts about working conditions and labor policies in those establishments to see whether these factors make a significant difference or are submerged by more pervasive local and national influences.

Similarly, the effects of community characteristics should be studied by comparing matched towns which differ widely in their history of labor-management conflict, their extent of union organization, or other significant variables of special interest. The effects of widespread influences such as rising living costs or decreasing employment should be analyzed in continuing trend studies, preferably by the use of "panel techniques," where the same persons are periodically re-interviewed. These inquiries would attempt to trace the distinctive subjective effects of changing conditions peculiar to individuals and special groups as well as to note the more general consequences of common influences affecting large sections of the population.

VALUE OF THE SUGGESTED RESEARCH

A series of investigations along the above lines could help answer many vital questions pertaining to labor-management problems and class relations in our society. The results would be valuable at two levels, one descriptive and immediately practical, the other explanatory and contributing to social psychological generalizations. The latter may also prove extremely practical, of course—in the slightly longer run, if not tomorrow morning.

On the descriptive level, the findings would provide authentic, impartial information concerning the feelings and attitudes that characterize conflicting industrial groups, thus helping to remove misconceptions and blind spots that interfere with constructive compromise and adjustment. At the explanatory level, the material would add, brick by brick, to the slowly growing structure of psychological knowledge regarding the conditions and motivations that produce group antagonisms and conflict and regarding those that lead to harmonious and cooperative relations. The evidence would test and refine current social theories and psychological interpretations dealing with group loyalties and oppositions and with the dynamics of inter-group and class relations and social change. Fortunately it appears feasible to push inquiries that will simultaneously serve both purposes, that of aiding present-day understanding and policy decisions and that of developing sound theory.

Among the more urgent questions on which the research can throw light are these: What are the predominant unsatisfied desires, the fears and tensions of different occupational groups? In what directions do they look for solutions? What information and misinformation have they, and what beliefs, about economic power relations? How adequately do labor leaders and management officials understand the deeper feelings and attitudes of the people they represent and those they deal with? What portions of the white collar groups identify their interests with those of organized labor and what portions with employers? Is industrial management losing the allegiance and backing of intellectuals and of technical, artistic, and professional groups—both those within industry and those outside? To what extent are middle class people generally confused and wavering in their attitudes toward private property rights, labor unions, big business, more government control or less government control? Do they—and do working people—feel unfairly dealt with? How far do the roots of labor unrest lie in industry and how far in factors outside industry? Do employees' dissatis-

factions and pressures for industrial change disappear under "good" management? What more, if anything, is needed?

And what of the people at the peak of the industrial power pyramid? Do they show growing readiness to accept new limitations on their "right to manage" in their own way? What reactions are evoked by actual or threatened curtailments of power imposed by organized labor and by government? Do top business circles manifest an increasing recognition of the wisdom or necessity for granting concessions in time? Or is the spirit that of staging a last ditch fight—even to the blotting out of political democracy if needs must be, to retain our present hierarchy of power and privilege?

These, I submit, are among the most crucial practical problems of our period. They deserve vastly greater attention than they have received by either social pyschologists or industrial psychologists. Their study constitutes a major sector of what we have labeled "industrial psychology as social science."

Even the *management* psychologist needs to think and interpret his material in this broader frame of reference. As industrial psychology is drawn more and more into the vital problems of employee motivations and labor relations, it can no longer retain its laboratory detachment, or bury itself within the shop it is studying. Plant walls are too thin to shut out the world.

Some readers will declare this is all Utopian. Maybe it is. Perhaps the battle lines of our society are so sharply drawn that non-partisan research on fundamental power relations is impossible. Perhaps social scientists who decide to work in these "dangerous" areas have no choice but to ally themselves on one "side" or the other—to use their research to prove a case, to furnish ammunition, to assist in manipulating others and "putting things over." I am not ready to accept this conclusion. I think we must *find* ways of studying these fundamental problems in the spirit of an open-minded search for true answers. Here and there a start has been made. But only the coming years can tell.

Management will see that *its* type of psychological work goes forward. The rest of us will be responsible for seeing that *society's* problems of industrial psychology are not ignored.

PSYCHOLOGICAL WRITING, EASY AND HARD

S. S. STEVENS AND GERALDINE STONE

Harvard University

Bad books on the subject of good writing, like tattered tailors, are a persistent anomaly. Clear, exemplary, insightful books on the art of casting prose are harder to come by. The trouble probably stems from the fact that reading and writing are psychological matters, to be unraveled by psychological insights based upon psychological experiments. Left to grammarians, and to writers both amateur and professional, the prescription for style becomes a set of do's and don't's aimed at embalming syntax and preserving verbal decorum. Examples of good writing are unerringly cited. Gems of style are agreed upon. But the crucial variables, the relevant dimensions, the what-really-makes-it-tick, have a way of escaping even those who produce the stuff.

The fresh fertility of the psychological approach shows itself in last-year's little book by Rudolf Flesch, *The Art of Plain Talk* (Harper). There we find rules for making writing hard to read, and for making it easy. Flesch builds his rules upon an analysis that ferrets out the factors affecting difficulty. He and others have studied how these factors relate to the reading comprehension of school children and how they relate to what is actually published in various segments of the public press. Out of these studies we get a formula—a simple little rule that tells us how to weight each of three factors in order to predict relative readability. It is a neat trick if it works. Flesch assures us that it works pretty well, provided we don't try to turn his simple yardstick into a magic wand. As a scale it correlates with what can be read by children in the various school grades and with what is actually printed in magazines ranging from comics to scientific journals. But it is only a scale, a rudimentary yardstick—not a ticket to literary fame.

Although the main feature of his book is the formula, Flesch almost wishes it were not. He rightly believes that he has other insights to convey. There are other dimensions to writing than bare readability. There are charm and ugliness, wit and vulgarity, originality and sham. These are not assessed by the numbers of Flesch's scale, nor are many other factors that determine difficulty, like subject matter (*e.g.* scientific technicalities) and formal complexities (*e.g.* logical or mathematical relations). But for gauging the likelihood that a given bit of prose will carry its burden to a given class of readers, the formula is a plausible device. And as we shall see, it seems able to set psychological writings into a reasonable rank-order on the dimension of difficulty.

First a word about the scale. Building on previous studies in the psychology of reading, Flesch worked out his weightings in a Ph.D. Thesis called *Marks of Readable Style*. True to the Ph.D. tradition, this "was not a very readable book." But whatever its obscurities may have been, its recasting as *The Art of Plain Talk* is certainly popular writing at its top. Even the formula gets palatable serving—sweeter than it is going to get here. For we are going to take it at a single gulp, as follows:

$$\text{Difficulty} = .1338L + .0645A - .0659P - .75$$

where L is average sentence length; A is number of affixes per 100 words; P is number of personal references per 100 words.

Long sentences make reading hard and so do big words compounded of roots and modifiers (prefixes, suffixes, and 'interfixes'). Personal names and personal pronouns make things easier and get into the formula by subtraction. The minus constant at the end is there apparently to make everything come out conveniently as in Table 1.

The various levels of difficulty *can* be read on the average by the school grades indicated. But, Flesch warns, few of us like our own potential level. Typically we choose our copy at a level one or more steps down. If you want academics to read you when they do not have to, aim your composition at level 4 to 5 and make it sound like the Atlantic Monthly.

Since a formula is no fun if you don't use it, we set about to enjoy Flesch by getting the count on our colleagues. Of course we started with *Hearing* by Stevens and Davis and promptly confirmed student

judgment that it is very difficult: score 6.4. One passage scored 8.3! A graduate student then came up with the comforting remark, "If it scores above six, that means it's scientific." By this logic there can be no question about the scientific status of psychology.

TABLE 1

The Flesch Scale of Readability

SCORE	LEVEL	TYPICAL MAGAZINE	POTENTIAL AUDIENCE (GRADES COMPLETED)
Up to 1	Very easy	Comics	4th grade
1 to 2	Easy	Pulp fiction	5th grade
2 to 3	Fairly easy	Slick fiction	6th grade
3 to 4	Standard	Digests	7th or 8th grade
4 to 5	Fairly hard	Quality	Some high school
5 to 6	Hard	Academic	High school or some college
6 and up	Very hard	Scientific	College

Actually the 'Flesch counts' on what follows were all made by a single scorer, G. S. It is a tedious business, especially the counting of the affixes. In compiling Table 2 she counted about 25,000 of them. Some arbitrary judgment entered of necessity, but she tried to keep it consistent. She took between 10 and 48 hundred-word passages at random from each author. The selection was purely mechanical, except that pages of tables, bibliography, etc., were rejected.

Table 2 lists the books approximately in order from easiest to hardest as measured by the scale. The authors in Murchison's Handbook are listed separately. For each average score we have tabulated a standard deviation based on the scores of the separate passages. What these standard deviations reveal, aside from the author's variability, we do not know. What the whole table reveals is to us a reasonable validation of Flesch's formula. The books we find easy score low; those we find hard score high. But the correlation is not perfect. There are some interesting exceptions.

The fact of the matter is that after we had scored certain works about which we were curious, we looked about for examples that might fall nearer the ends of the scale. Various members of the laboratory made nominations of writers they thought might be very hard or very easy. In general their candidates scored as expected, but there was one glaring exception: Professor Koffka, about whom more later.

The popularizers scored low. It would now seem established that grown-up psychology can be dressed in short sentences. *Psychology for the Fighting Man* (3.5) puts 20 words between its periods and scatters only 32 affixes over each hundred words. *Mind Explorers* (4.3) has even shorter sentences but is richer in ten-dollar words: 50 affixes per hundred. Both books are highly readable as psychology goes. The first is more didactic, the second more narrative.

Even when he gets to anatomical descriptions—portrayed by most writers in serpentine sentences—the "fighting man" is let off with an easy recital. On p. 101 he reads:

> "In the inner ear are the semicircular canals. These canals have nothing at all to do with hearing. The sense-organs in them, however, help a man to keep his balance, tell him when he is rotating, when speeding up or slowing down.
>
> "In the inner ear also is the *cochlea*. This is a longish tube, curled up like a snail-shell, filled with liquid, and divided through its length by a partition. Part of this partition is a long strip of membrane, narrow at the broad base of the cochlea, wide at its tip. The auditory nerve-fibers begin in cells that rest on this membrane. When the vibrations get to this membrane, then you hear sound."

Mind Explorers is more gossipy and breezy—with some of the inevitable inaccuracies of popularized science. But the text is seldom tiresome, even when berating anthropomorphism, as on p. 270:

> "Doubtless, laboratory animals consider all these tests so much nonsense. To the animals it must be quite unimportant that man can reason, use ideas, and make verbal formulations. For purposes of social organization and contented living the instincts of many animals are superior to the so-called reasoning ability of man. Yet we human beings, with our vast egos, measure the universe by our own pace. What we know, feel, see, taste, believe, and *are* must be the *right* way of life for all the beings on the earth."

We happen to know nothing at all about how the team of Winkler and Bromberg carried on: who dug up the facts and who stoked the literary fire. Pre-

sumably Bromberg, the M.D., gathered the clay and newswriter Winkler gave it the breath of life, but it is not a certainty that the talents of an M.D. would be a literary liability. In the team of Boring and Van de Water, about which we know more, there was initially a division of labor. It was Miss Van de Water, of Science Service, who knew the tricks of writing for the millions. She could chop sentences down to size and put in the short, vivid word and the personal touch. Professor Boring, an established master at Flesch-count level 6, had to learn. And gradually he did. He learned how hard it is to be easy. But he learned well enough so that before long the two authors were rewriting each other—ping-ponging each chapter back and forth until one of them let it pass. Boring says it was fun but that he would prefer not to earn his living at that kind of chore. A professor constrained to short sentences and deprived of his affixes feels like a duck hunter armed with a pea shooter.

Psychology for the Armed Services was a deliberate attempt to jack up the level of *P for the FM* and make it suitable for a college text. The target chosen was midway between the level of *P for the FM* and the level of the textbook by Boring, Langfeld, and Weld. Although the sights were set without benefit of Flesch, the hit was a bullseye on the scale of readability: *BLW* = 5.1, *P for the AS* = 4.3, *P for the FM* = 3.5.

Wertheimer's little book on *Productive Thinking* scores 4.6. The publisher is not wrong when he calls it "an unusual, original and seminal volume." It is original and seminal because it is Wertheimer: simple, shrewd, ingenious, observant. It is unusual because, so far as we are aware, no other treatise on the psychology of man in thought is so readable. It reports original research and inquires into such esoteric subjects as the productive cerebrations of Einstein, Galileo, and Gauss. It examines historical notions about logic and association. It propounds

TABLE 2

NAME OF AUTHOR	BRIEF TITLE	NO. OF SAMPLES	FLESCH SCORE	S.D.
Boring & Van de Water	Psychology—Fighting Man	20	3.54	1.06
Winkler & Bromberg	Mind Explorers	20	4.34	.95
Boring	Psychology—Armed Services	20	4.32	.88
Wertheimer	Productive Thinking	20	4.63	1.01
Woodworth	Psychology	20	4.87	.77
Ruch	Psychology and Life	20	5.05	1.13
Munn	Psychology	20	5.07	.81
Boring, Langfeld & Weld	Introduction to Psychology	40	5.11	.94
Koffka	Gestalt Psychology	12	5.37	.54
James	Principles: Vol I	14	5.67	.88
	Principles: Vol. II	12	6.47	2.06
	Principles: Vols. I and II	26	6.04	1.59
Allport	Personality	11	5.99	.52
Morgan, C. T.	Physiological	10	6.00	.93
Boring	Sensation and Perception	48	6.06	1.28
Stevens & Davis	Hearing	12	6.39	.95
Kantor	Principles	20	6.67	1.27
Morris	Signs, Language and Behavior	20	6.72	1.10
Adler	What Man Has Made of Man	20	7.15	1.55
	Murchison: Handbook of General Experimental Psychology			
Morgan, T. H.	Heredity	10	6.13	1.02
Hecht	Vision: II	12	6.26	.71
Graham	Vision: III	10	6.36	.35
Troland	Vision: I	10	6.43	.76
Lashley	Learning: III	10	6.66	.79
Davis	Audition: III	13	6.85	.99
Crozier	Chemoreception	14	7.13	.86

a theory for the structural dynamics of thought. All this in sentences that average 18 words!

Wertheimer is easy to read, but he is not easy. You cannot afford to drowse with the expectation of waking up in the next chapter ready to roll on with the plot. His reasoning is tight. His mathematical and geometrical problems must be understood to be followed. In short, the study of thinking requires thought. Wertheimer's prose does not swing along like Irwin Edman's. It jerks in spots, and taxes the reader with puzzles. Nevertheless, the count of 4.6 is a good index of how Wertheimer is crisp and clear on a topic where authors are mostly discursive and vague.

Next come the standard elementary texts. At 4.9 Woodworth's persistent best seller seems to have the edge over Ruch, Munn and BLW, all near 5.1. But these are small differences, and if you swear by one or another of the authors it must be for reasons other than their Flesch score. They are all at the level readable by college students and they are all "accepted." Whether they make good reading like Paul de Kruif or Dale Carnegie is another matter. Flesch would predict that they couldn't possibly, for how then could they have gotten past the instructor? Flesch complains that textbooks seldom get an even break: they don't stand or fall on the basis of acceptance by their readers. They get censored by the man who teaches the course.

Only a little higher on Flesch's scale than the elementary texts is Koffka's *Principles of Gestalt Psychology*. Koffka more readable than William James! This is a startling bit of news. It will take some explaining. The Harvard graduate students don't believe it, because they read Koffka and sweat. And, before his opus had been counted there were several who were backing Koffka for the lead as high scorer. But there it is: Flesch count 5.4.

Now how can Koffka, the students' choice for unreadability, score so low? Or conversely, at 5.4 on the scale, how can he be so thoroughly uphill? Opinion around Harvard seems divided on this question, but this opinion is based on mere casual introspection, not on the result of careful analysis. A few things appear evident, however. For one thing, Koffka helps his score by peppering his passages with personal pronouns: 5.8 per hundred words. But his "I," "we" and "you" are rhetorical devices—he is actually very rarely talking about us or about himself. He is talking about abstractions and complicated relations and *he* and *we* get into it as mere guinea pigs in an experiment. He uses many nonspecific terms and pronouns whose antecedents are hard to keep track of. And too often he diverts our attention from the meat of the immediate issue by allusions to related questions and to the intricacies of the logic of his own presentation. Here is a sample from p. 280.

> "In the first cases, real moving objects present in the field, the shift of the retinal pattern leads to behavioural motion of objects, whether I fixate a non-moving object or follow a moving one with my regard; in the second case, when my eyes roam over stationary objects, such a shift will *not* have this result. Although the two facts belong closely together, the second one will be fully discussed in Chapter IX, after we have introduced the Ego. Here we concentrate mainly on the first, even if we cannot entirely avoid referring to the second. Thus we turn now to the theory of perceived motion."

This passage scores a bare 4.2. It has 21-word sentences, 41 affixes and 7 personal pronouns per hundred words.

Where could a passage like this be found in William James? This old master, the despair of imitators, runs up a count of 6.0 when the scores on both volumes are averaged. He also has the highest standard deviation of the lot. His variability is due to sentence length: one sample averaged 14 words, another 56. But James wrote in a century when periods were less highly regarded than at present, and some of his sentences become full-length portraits of a fact or phenomenon, replete with examples, and graphically adorned with adjectival shadings. James is nearly always vivid, nearly always ready with concrete imagery. He is not above being tedious when the subject matter is tedious, but at his quotable best—when (in Vol. 1, p. 121) he is telling us about habit, "the enormous fly-wheel of society"—he leaves almost nothing to be desired. And down comes his Flesch count to 4.1.

The rest of the authors scoring between 6 and 7 would seem to be appropriately placed. Not that they are homogeneous in literary skill, but in these books they are writing technical stuff for college

graduates and they fall where Flesch predicts. *The Handbook of General Experimental Psychology* averages over 6.5, which is high—and hard. It shows what happens in handbooks, and why graduate students suffer. A handbook at level 5 a point and a half below Murchison, would probably put too much of a strain on the contributors, but is there any reason why the ceiling could not be lowered to 6? T. H. Morgan almost made it.

When an author is in the mood for verbal eruption it does not require even the pressure of a handbook to draw out of him long, overstuffed sentences. Professor Kantor gets his score up to 6.7 while writing his own *Principles*, where elbow room for simplicity should have been ample. And as though the jungle of our psychological jargon were not already dense enough with affixes, Kantor multiplies them in novel arrangements. On p. 225 he says:

> "The elementary fact of actualizing the stimulational function of objects, with its consequent selectional and organizational implications, points to a satisfactory behavior relationship between the organism and its surroundings which well merits the name of control."

Very rarely do we find a sentence with as many affixes as words, but this one falls short by only five.

Mr. Adler runs up his score to 7.2 by similar devices. He hits a high, shrill note of abstraction and holds it with seldom a pause for breath. In a particularly breathless phase on p. 167 he reads like this:

> "The phenomena of change require the notion of contraries which inhere in matter disjunctively and lead to a conception of matter as having the potentiality for the opposite contrary whenever a given form determines it actually. The contraries are forms; they are determinations of matter. The perpetual process of change is understood when it is grasped that no single form determines matter absolutely, i.e., exhausts its appetite or potentiality for contrary forms. Efficient causality in change is the energetic reduction of the potentiality of matter for a given determination to that determinateness actually."

The amazing thing is that Mr. Adler can keep it up from cover to cover. Polysyllabication in every line.

In some ways *Signs, Language and Behavior* at slightly over 6.7 is the hardest book on the list. A sample of Morris' message and of his way of putting it is taken from p. 219.

> "When so conceived, pragmatics, semantics, and syntactics are all interpretable within a behaviorally oriented semiotic, syntactics studying the ways in which signs are combined, semantics studying the signification of signs, and so the interpretant behavior without which there is no signification, pragmatics studying the origin, uses, and effects of signs within the total behavior of the interpreters of signs."

The book is sober and earnest, packed with neologisms, innocent of gossip and humor. Used as a text in a Harvard course it furrowed the brows of the students who struggled through it. But like the agreeable exhaustion of a hard game of squash, the mental toil of the push through Morris was judged by several readers to be satisfying exercise. They knew something when they got through. Would they have known more if the affixes had been fewer?

Whatever else they may add up to, these examples and these Flesch counts show the feasibility of the psychological approach to readability. Better formulas are sure to come, but the one used here is good for a start. It taps at least some of the essential components of communication; it offers a handy guide to the capacities of different classes of readers; it is a boon to the academic who wants to be simple but who knows not what it means. It is a way to insight. And after one has composed his piece, it is a means of finding out to whom he thinks he is writing.

This article scores 3.2 (ridiculously easy for a psychological journal). Its writing was a collaborative enterprise in which Stevens laid the first draft and Stone used the red pencil. Hers was the thankless part of the task. Because, except for those she missed, the gaucheries have been pruned away and filed where you can not see them.

REFERENCES

1. ADLER, M. J. *What man has made of man.* New York: Longmans, Green, 1938, 124–244.
2. ALLPORT, G. W. *Personality, a psychological interpretation.* New York: Henry Holt, 1937.
3. BORING, E. G. *Sensation and perception in the history of experimental psychology.* New York: D. Appleton-Century, 1942.
4. BORING, E. G. (Ed.). *Psychology for the armed services.* Washington: The Infantry Journal, 1945.
5. BORING, E. G., LANGFELD, H. S. AND WELD, H. P. (Ed.). *Introduction to psychology.* New York: John Wiley, 1939.
6. BORING, E. G. AND VAN DE WATER, M. (Ed.). *Psychology for the fighting man.* Washington: The Infantry Journal, Penguin Books, 1944 (2nd ed.)
7. FLESCH, R. *The art of plain talk.* New York: Harper 1946.
8. JAMES, W. *The principles of psychology, Vols. I and II.* New York: Henry Holt, 1890.
9. KANTOR, J. R. *Principles of psychology.* New York: Alfred Knopf, 1924.
10. KOFFKA, K. *Principles of Gestalt psychology.* New York: Harcourt, Brace, 1935.
11. MORGAN, C. T. *Physiological psychology.* New York: McGraw-Hill, 1943.
12. MORRIS, CHARLES. *Signs, language and behavior.* New York: Prentice-Hall, 1946.
13. MUNN, N. L. *Psychology.* Boston: Houghton Mifflin, 1946.
14. MURCHISON, C. (Ed.). *Handbook of general experimental psychology.* Worcester: Clark University Press, 1934.
15. RUCH, F. L. *Psychology and life.* Chicago: Scott, Foresman, 1941 (New Ed.).
16. STEVENS, S. S. AND DAVIS, H. *Hearing: its psychology and physiology.* New York: John Wiley, 1938.
17. WERTHEIMER, M. *Productive thinking.* New York: Harper, 1945.
18. WINKLER, J. K. AND BROMBERG, W. *Mind explorers.* New York: Reynal & Hitchcock, 1939.
19. WOODWORTH, R. S. *Psychology.* New York: Henry Holt, 1921 (Revised Ed.).

PSYCHOLOGISTS' FINANCES

HELEN WOLFLE

American Psychological Association

Psychologists' salaries are going up. It is indeed fortunate that this is true, for so are their expenses. Expenses, in fact, have gone up faster than salaries. And psychologists' salary increases have lagged behind national income figures. The following paragraphs estimate our financial position nationally in respect to these variables.

Two recent articles have shown substantial increases in the average salaries paid psychologists. Bryan and Boring (*1*) reported a median salary for all psychologists of $3030 in 1940. In 1944 the median had increased to $3525. Smaller or larger gains were made by all sub-groups analyzed—men, women, persons with the Ph.D., and those without it. Percentage gains for three classes: all psychologists, those with the Ph.D., and those without it, were respectively 16, 15, and 27. Burnham (*2*), studying the salaries of Connecticut psychologists, found increases averaging $300 a year between 1944 and 1945. Medians for 1940, 1944, and 1945 are shown in Table 1.

TABLE 1

Median salaries for different groups of psychologists in 1940, 1944, and 1945

GROUP	MEDIAN SALARIES		
	1940	1944	1945
All psychologists	$3030	$3525	$3819*
Psychologists with Ph.D.'s	3405	3907†	4200*
Psychologists without Ph.D.'s	2343	2965†	3295*
Male psychologists	3195	3910	
Female psychologists	2490	2850	
Connecticut psychologists		3600	3900
Connecticut Ph.D.'s		3900	4200
Connecticut M. A.'s		2700	3000

* Estimates made on basis of salary increases of Connecticut psychologists from 1944 to 1945.

† These two figures are approximations based upon the data in Table 8 of reference 1.

In Figure 1 curves are drawn showing the 1940, 1944, and 1945 figures for three groups of psychologists. Median salaries for 1940 were used as a base and plotted at the 100 per cent point. Medians for 1944 were plotted for each group in terms of percentage increase over 1940. Estimates for 1945 are plotted for the same three groups. These estimates were obtained by comparing the 1944 Connecticut figures with Bryan and Boring's national figures for the same year and assuming that the ratio of Connecticut psychologists' salaries to the national sample was the same in 1945 as in 1944. That gave three terms of a proportion: 1944 Connecticut, 1944 national, and 1945 Connecticut. The unknown term, 1945 national, was computed from the proportion and plotted in Figure 1. The average psychologist making $3030 in 1940 was thus estimated to be making $3819 in 1945.

For more recent years, another estimate of the increase in salaries was obtained from the job requests received by the APA personnel placement service and its predecessor, the Office of Psychological Personnel. The largest single group of requests was for college instructors. The median salary offered in the first four months of 1944, 1945, 1946, and 1947 for instructors was:

YEAR	MEDIAN SALARY OFFERED	NUMBER OF REQUESTS IN FOUR MONTHS
1944	$2000	5
1945	2200	7
1946	2500	18
1947	2675	12

These figures are also plotted in terms of percentage increase in Figure 1. I do not know at what salaries these positions were actually filled; the figures are those the appointing officers mentioned as initial offers in trying to find instructors.

Figure 1 also shows some national statistics from the Department of Labor with which psychologists' salaries can be compared. The government cost-of-living index rose a little faster than salaries from 1940 to 1943, held rather steady from 1943 through

1945 while salaries tended to catch up, and then jumped sharply when OPA controls were removed in 1946.

Per capita income rose much more rapidly than psychologists' salaries. While the median psychologist in 1945 was congratulating himself on the fact that his salary was about 25 per cent greater than it had been in 1940, the average citizen of the country was congratulating himself on having an income twice as great as it had been in 1940.

TABLE 2

YEAR	MARRIED, NO CHILDREN, TO HAVE $2000 LEFT AFTER PAYING TAX	MARRIED, TWO CHILDREN, TO HAVE $4970 LEFT AFTER PAYING TAX
1939	$2000	$5000
1940	2000	5021
1941	2025	5204
1942	2124	5563
1943	2238	5924
1944	2248	5800
1945	2248	5800
1946	2184	5575

Rising prices and more money in circulation placed the psychologist in a more unfavorable position in 1945 than in 1940. A further factor was the income tax. Income taxes alone took up all or most of the dollar increase in his salary. In Table 2, the income tax for two typical psychologists is computed. One is an instructor with a wife but no children whose salary was $2000 in 1940. That year he paid no federal income tax. In 1944 he had to make $2248 in order to pay his income tax and have $2000 left. The other is a psychologist with a wife and two children. He earned a salary of $5000 in 1940 and had to pay only $30 income tax. In 1944 he had to make $5800 in order to have the same amount, $4970, left after paying his income tax. These figures were obtained on the assumptions that family size did not change, that the wives were not working, that there was no other income, and that from 1939 through 1943 both individuals were entitled to deduct ten per cent of total salary for deductible items. From 1944 on, the income tax of the $2000 man was taken from the tax-computation tables which accompanied the income tax form. From 1944 on, the $5000 man was credited with the standard deduction of $500 each year. Figures for all years from 1939 through 1946 are shown below. The incomes are those necessary to have the same amount left after paying income tax.

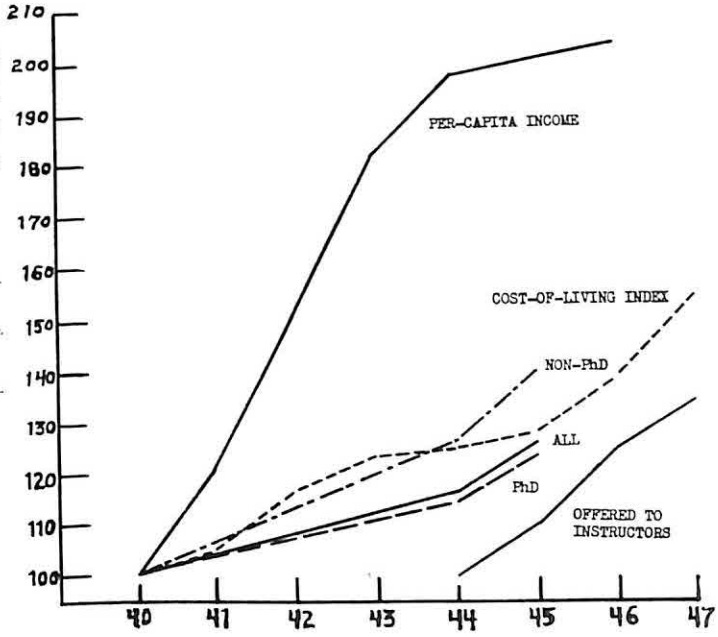


FIG. 1. INCREASE IN COST OF LIVING AND IN PSYCHOLOGISTS' SALARIES

All curves except one are plotted as percentages of 1940 figures. Salaries offered instructors are plotted as percentages of 1944 bids

The percentage increase in salary from 1940 to 1944 necessary to allow these two men to have the same number of dollars left after paying income tax was 12 per cent for the $2000 man and 16.7 per cent for the $5000 man. The reported percentage increase in median salary for all psychologists during this period was 16.3. Thus income tax alone used up most of the extra dollars that psychologists were earning.

These changes in economic conditions and in taxes affect different segments of the population differently. Prices and taxes are higher now for everybody than they were in 1940. Yet, in many industries, a worker's wage today buys more goods than it did then. On the average workers in the automobile and publishing industries and in utilities can buy much the same. Big wage gains have been made in coal mining, textiles, apparel, construction, lumber, and leather goods. But whitecollar earnings have suffered. Real earnings are down among govern-

ment workers, teachers, financial employees, some retail employees, and many executives.

It is estimated that the 30 psychologists who earned more than $10,000 in 1940 (*1*, Table 8) could obtain only $5,400 worth of 1940 goods on the same salary today. If these 30 psychologists were to be as well off now as they were in 1940, each should now earn more than $25,000 a year.

The President's Commission on Higher Education has recently completed a national survey of college teachers' salaries. An average increase of 30 per cent since 1940 was found. Increases planned for next year (1947–48) average an additional 8 per cent. These figures apply to college teachers in all fields and not to psychologists alone. The increases shown in Figure 1 apply to all psychologists and not to college teachers alone. Yet the two sets of data agree; psychologists as a group have apparently received about the same increases as college teachers.

Academic psychologists share with all their faculty colleagues a less favorable salary status than they had in 1940. Complaining about the cost of living is not, however, a major occupation of psychologists. I had little success in promoting this topic at the regional meetings this spring. The magazine *Time* has repeatedly said that the high cost of living is a main topic of conversation. I asked a prominent Midwestern psychologist if that was true in his department. He replied that among the professors, what to do about clinical psychology was the main topic; but that HCL probably took first rank among the younger staff members.

I continued to ask others about living costs, and turned up a variety of items. Even with a little encouragement. Northwestern University faculty wives who came to the Midwestern meeting would not complain of the cost of dinner, but rather of the difficulty of obtaining sitters at any price to stay with the children. An Eastern psychologist said he was never in on these discussions at his home institution because the physics and psychology departments had the best salaries on his campus. One couple mentioned, somewhat wryly, that they were not building the house they had planned; they were eating their savings instead. Two psychologists did not know that the cost of professional journals could be deducted from their incomes in making income tax returns.

While there is not a great deal of overt complaint, financial difficulties obviously affect psychologists' behavior. At the Eastern Psychological Association, many came Friday morning, and saved the cost of Thursday night in an Atlantic City hotel. Luncheon in the main dining room was attended by a gay crowd of psychologists welcoming each other. At dinner time the place was empty. A menu explained why: $4.50 for a minimum dinner and $6.00 for a steak. Many psychologists ate instead at a block-long seafood restaurant where a seafood platter could be obtained for $2.00; others were at Childs. In contrast, when the Midwestern Association met a week later at the Edgewater Beach Hotel in Chicago, both rooms and meals were less expensive; there was little effort to try to save by going elsewhere for meals.

As a profession, we are better off than some others. But we are much worse off than we were in 1940 when we compare ourselves with national averages. We can be pleased with the salary increases we have received since 1940, but the figures quoted above answer the perennial end-of-the-month question of where has the money gone; it has gone for tax increases, for increased cost of food and clothing, and for drastic increases in cost of services. Unless these costs come down, we will need substantial further salary increases even to maintain the standards of living we had in 1940.

REFERENCES

1. BRYAN, A. I., AND BORING, E. G. Women in American psychology; statistics from the OPP questionnaire. *Amer. Psychologist*, 1946, **1**, 71–79.
2. BURNHAM, P. S. Connecticut psychologists survey their 1945 earnings. *Sch. & Soc.* 1947, **65**, 107–110.

THE NEW HARVARD PSYCHOLOGICAL LABORATORIES

S. S. STEVENS AND E. G. BORING

Harvard University

LOYAL Harvard psychologists always say that the Harvard Psychological Laboratory began with a pair of rooms in Lawrence Hall fitted up by William James when he "founded" instruction in experimental psychology. James later said that this was "in 1874–75, or 1876, I forget which." The year 1876 was three years before Wundt founded the "first psychological laboratory in the world" at Leipzig in 1879 and seven years before Stanley Hall founded the "first psychological laboratory in America" at Hopkins. Of course Stumpf had had still earlier his tuning-fork laboratory, the one that he carried around in a cigar-box under his arm. That would have been about 1875, possibly a year ahead of James.

The original Harvard laboratory seems to have lasted until 1891 when James, by then the author of the *Principles*, raised $4300 for new facilities and moved to two large rooms in Dane Hall (where Lehmann Hall now stands). Herbert Nichols was put in charge, and then in the next year Münsterberg arrived from Freiburg to take command. There was at once the usual struggle for space, for more small separate rooms. In 1893 Münsterberg split a lecture room up into four little cubicles, and by the turn of the century the laboratory had been increased by various devices to eleven inadequate rooms. In 1901 the move was started to get funds for an adequate building for Philosophy, a building which would include a proper psychological laboratory. It was planned to name the new building for Emerson and to have the funds secured by the time of the Emerson centennial birthday on May 25, 1903. On that date contributions for more than the estimated $150,000 were in hand. The actual building finally cost $208,485 (3).

Emerson Hall was dedicated on December 27, 1905, by a debate between philosophers and psychologists as to whether experimental psychology belongs within Philosophy or within the Natural Sciences. Münsterberg, of course, argued for the inclusion of psychology in philosophy. He quoted Wundt's letter to him on that occasion. "I believe," wrote Wundt, "that psychology, not only now, but for all time, belongs to philosophy: only then can psychology keep its necessary independence." The new laboratory in Emerson Hall had twenty-four rooms besides store-room, lavatories and coat-room. It had a workshop, an instrument room, a room for the student laboratory course, a photographic room, a "sound-proof" room, animal rooms and dark rooms. It was thought to be large and spacious, but in six years it had become too small. On all this history, see (2).

In 1912 Yerkes' animal rooms were moved to ill-partitioned rooms in the attic to make way for Dearborn and educational psychology on the third floor. In 1916 Münsterberg died and Langfeld took over. When Langfeld went to Princeton in 1924, Boring became Director. In 1927 Morton Prince turned up with $125,000 for a "department of abnormal psychology," which finally became the Fund for Abnormal and Dynamic Psychology and thus the Harvard Psychological Clinic. The clinic lived in one divided room in Emerson Hall for two years, migrated to a house near the Charles River, migrated to another house on Plympton Street, where it is now a part of the new Department of Social Relations.

In 1929 Emerson Hall was bursting and we secured the top floors of Boylston Hall, built in 1857 and then being vacated by the chemical laboratories. There we housed animal psychology and the student laboratory course. On this demand by us for rooms vacated by Chemistry, President Lowell remarked that "professors are like a perfect gas: they fill all the available space." In 1934 Lashley arrived and was given space for his Laboratory of Physiological Psychology in the Biological Laboratories, where he remained until he went off to the Yerkes Laboratories of Primate Biology in 1942.

In 1940 the Psycho-Acoustic Laboratory was

begun to investigate problems in hearing and communications. Stevens was in charge and was presently made its Director. The funds came first from the OSRD; now they come from the Navy. The laboratory was built in the east basement of Memorial Hall, a huge pile of Victorian Gothic begun in 1870 and finished in 1876 as a memorial "to the men of Harvard who died to preserve the Union." Its renovation was a hard campaign against ugly pipes, decrepit coal bins, defunct oil tanks and disintegrating boilers. A few rooms at a time these sooty reaches yielded to the conquest of carpenters, painters, electricians. Initially skeptical, the University's administration gradually became delighted to find that, wholly unsuspected, the mountain of Memorial Hall had in it something quite as good as gold: good usable space.

For two years then, from 1940 to 1942, psychology at Harvard went on in five buildings and four autonomous laboratories: (1) the Laboratory of General Psychology in Emerson Hall (Boring in charge), which also housed social psychology and the offices of the Department; (2) the annex in Boylston Hall where there was everything that could be squeezed in nowhere else; (3) the Psychological Clinic on Plympton Street (Murray in charge), which promoted truly experimental research on personality as well as the other forms of personality assessment; (4) the Laboratory of Physiological Psychology in the Biological Laboratories (Lashley in charge); and (5) the Psycho-Acoustic Laboratory in Memorial Hall (Stevens in charge). Paradoxically the thing that brought experimental psychology together was the fission.

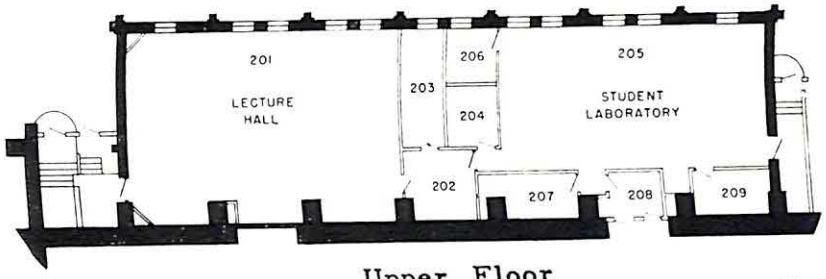
The great fission occurred in 1946. It began with a fusion. Social psychology, cultural anthropology and sociology wanted to unite in a common effort, establishing for themselves a Laboratory of Social Relations. They formed the Department of Social Relations, and took along with them the Psychological Clinic (1). But they needed space for their laboratory. Emerson Hall might provide it if psychology got out. Psychology might go to the Biological Laboratories, but then what about the Psycho-Acoustic Laboratory? We were tired of having experimental psychology scattered all over Harvard's part of Cambridge, of being strangers to our own departmental colleagues. We were ready to give all our isolated attics back to the Founding Fathers for a chance at unification in a basement.

The Provost was persuaded. In two jumps the Corporation appropriated $150,000 to remodel the rest of the basement and some of the first floor of Memorial Hall for the combined Psychological Laboratories, authorizing the first use of this plural title in its appointment of E. B. Newman as Associate Director of the Psychological Laboratories. Added to what already housed the Psycho-Acoustic Laboratory, the new space brings the total to 30,000 square feet (compared to our 10,000 in Emerson Hall). As the new laboratories come into function, there is discoverable no sharp line of demarcation between the separate units—general, physiological and psycho-acoustic. Duplication of function is avoided. Research projects and permanent functions are localized wherever convenience dictates. The graduate students and their researches range freely about. The shops do work for everybody. The library and seminar room are communal and the use of common facilities tends to produce common goals and good morale. Whether the fission from social psychology was good or bad, the fact remains that the experimentalists have it to thank for their own close fusion as well as for their new laboratories.

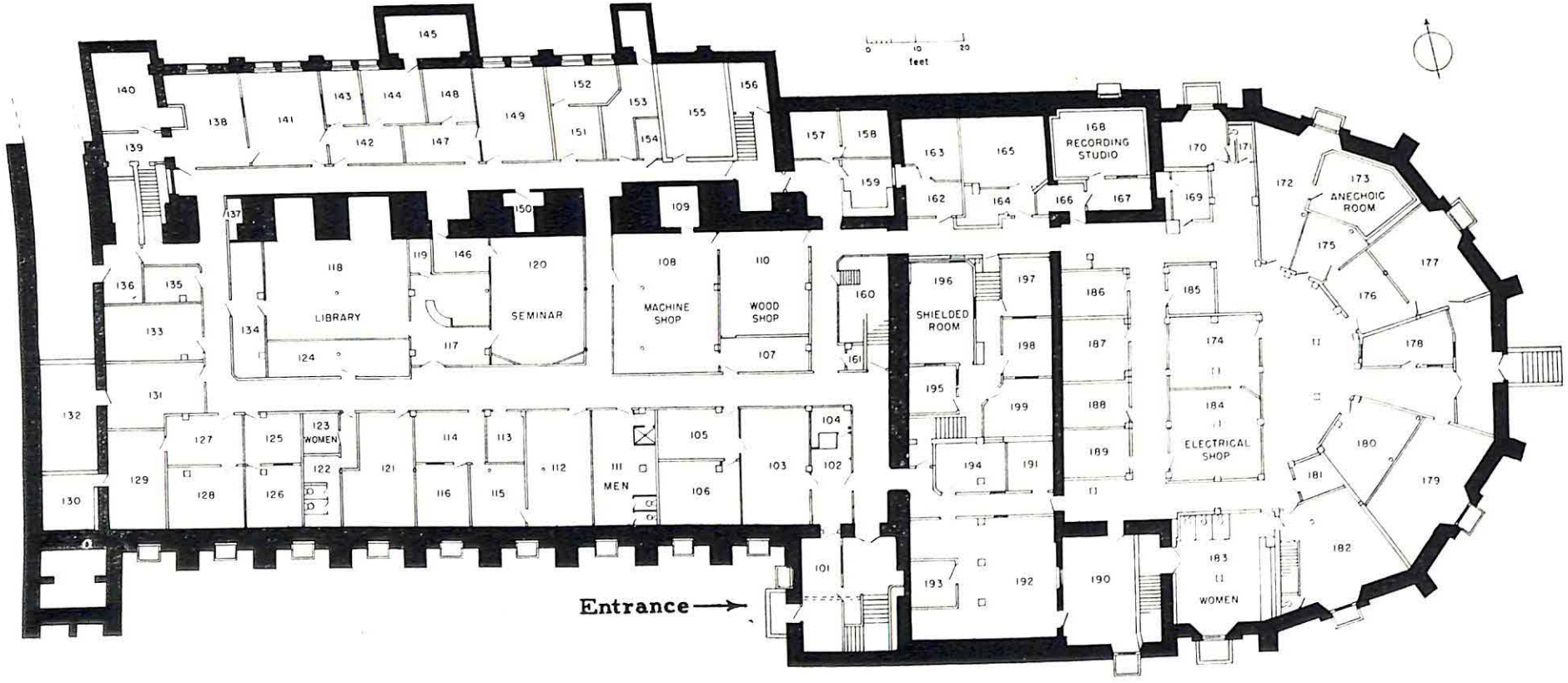
The plan shows the lay-out. We have on the lower floor ninety-nine rooms (101–199) if we count a few closets, and on the upper floor, on the north side where the old serving kitchens for the college commons used to be, nine more rooms (201–209, at the upper left part of the plan). We have placed the central features—the library, the seminar room, the shops—in the center of the newest part of the laboratories.

Library. Room 118 is the Robbins Library of Psychology, our part of the old Robbins Library of Philosophy and Psychology. Most of the psychological journals, except those in social and clinical psychology, are there, from Wundt's *Philos. Stud.* to APA's *Amer. Psychologist.* The books are to be built up to constitute a working library, all of them, like the journals, being duplicates of the main Widener Library. If the trend continues and libraries double in size every twenty years, the panels hiding the lower shelves of this one will have to be unscrewed within the next decade, and thirty years from now we shall be looking for a new place to stand our volumes. As it stands the

PSYCHOLOGICAL LABORATORIES
Memorial Hall, Harvard University



Upper Floor



library has about 600 shelf-feet. On its north side the library has two attractive deep alcoves set in the thick masonry of Memorial Hall's foundations. One of them was originally a bake oven. Room 134, if locked against the hall and open to the Library, can be used as an accessory reading room, a room for typing from library books or for laying out data from books. The librarian or an attendant is behind the curved desk in Room 117.

Seminar Room. Room 120 is the Seminar Room. It has in it a large oval table, 6 x 12 feet, with a metal rail to put your feet on. There are 12 Windsor chairs at the table and 26 more around the room. Green glass 'blackboards' are at one end, and an electric clock on each end wall allows both the preceptor and the essayist, facing each other, to know how goes the enemy. The room is used for seminars, conferences, the regular Colloquium (with tea and cookies), the daily Staff Lunch (make your own sandwiches and draw your own coffee), graduate examinations, and some small conference classes. Because some of these functions are oral—phageal—we have a pantry in Room 146, with electric refrigerator, kitchen sink, stove and a buffet table. We are committed to the view that ingestion aids intellection.

Graduate Students. We are further committed to the view that the laboratory exists for old hands to do research and to inspire young hands to imitation. (Of course it mostly works the other way around.) Graduate students learn best if they can live their days in the laboratory, having their own desks and tables, bookcases and files. Numerous small rooms, and rooms like 124 divided into cubicles, provide these student nooks. Self-education and group morale are further bolstered by provision for daily student lunches: refrigerator and pantry service in Room 182 and a large conference (lunch) table in Room 179.

Shops. Room 108 is the machine shop where we have the lathe, the bench lathe, the drill press, the grinder, the automatic hacksaw from Emerson Hall, and a new milling machine for which we have been saving for five years. We are fortunate in having been able to keep Ralph Gerbrands—his office is Room 107—as mechanician. His work and his apparatus notes are known to many psychologists.

The wood shop is in Room 110. There Herbert Olsen reigns, another man who has supported the work of the laboratories for many years. He has two power-saws, a powered jig-saw, a drill press, and a sander.

Laboratory of General Psychology. The general laboratory and the offices of the Department belong approximately in Rooms 101 to 135. Room 101 is the receptionist's, Room 102 the departmental secretary's, Room 103 the chairman's. The other rooms are just the many small rooms which Münsterberg noted in 1901 a psychological laboratory must have. They can be used as research rooms, offices, storage rooms, and their functions will doubtless change from year to year and oftener.

Laboratory of Physiological Psychology. Rooms 138 to 152 are designed for animal care, food storage, steam sterilizing, surgical techniques, and for physiological psychology in general. They have the tiled floors and the drains of the old kitchens, a separate year-round steam supply and a separate air-exhaust system. Otherwise they are like the rest of the laboratory. J. C. R. Licklider is in charge.

Psycho-Acoustic Laboratory. The east end under Sanders Theater holds the Psycho-Acoustic Laboratory, contracted in size to peacetime dimensions. There are offices and research rooms. Photography is in Rooms 157 and 158, drafting in 162 and 163, calculating machines in 169. Room 173 is an anechoic chamber, lined with Fiberglas wedges on the walls, floor and ceiling. Room 177 is the director's office. Room 179 is a conference room. Room 184 is the electrical shop. Room 191 is an electrically shielded room, and across the hall in 192 is a noise chamber where 16 loudspeakers and a 1200-watt amplifier can set up a din equal to about 135 decibels.

The last bit of construction, just being painted as this goes to press, is the subdivision of the old boiler room into Rooms 197, 198 and 199. This was the first space cleaned up and occupied back in 1940 and the last, we fervently hope, to bear the clutter of construction in 1947. The three new rooms will provide for electrical recording from physiological preparations. Operations can be performed in 197, recording equipment can be set up in 199, and in between is a sound-treated, electrically shielded room serviced with compressed air and electrical patch-panels.

Lecture Hall. The Lecture Hall, Room 201,

is upstairs on the first floor. The students and the public reach it by a special door from outside, though we from below have access by two inconspicuous stairways. The room seats 111 persons on 21-inch theater seats with tablet arms and extra leg-room for the lengthening Harvard students. A large projection screen above the green 'blackboard' can be drawn back at an angle into a recess in the wall so as to take projection from a lantern on the desk, or it can be left flush with the wall for projection from the back of the room. Since the windows are blocked up and the room illuminated by fluorescent tubes, there is no difficulty about darkening it for projection. A room for demonstrational apparatus is back of the lecture desk.

The introductory course is too large for Room 201 and must be accommodated in one of the University's larger halls. The present plan is to hold Psychology 1 in Sanders Theater, the nearly semi-circular hall at the east end of the building, directly above the Psycho-acoustic Laboratory.

Student Laboratory. The elementary laboratory course goes on in Rooms 202 to 209. Room 205 has many tables in it and is capable of being divided into booths by partitions if that is desired. The six smaller rooms around 205 make it possible to isolate small groups of students experimenting in the elementary course.

General Features. Psychology in Memorial Hall is ideally and appropriately located on a separate triangle near the center of gravity of the academic scene. To the south is the yard with its libraries, classrooms and the Departments of Philosophy and Social Relations. To the north are the other laboratories, physics, chemistry, biology. Our view, like our interests, extends both north and south.

It actually cost more to remodel Memorial Hall for these laboratories (including the Psycho-Acoustic Laboratory, a quarter of a million dollars) than it cost to build all of Emerson Hall forty years ago; yet the present job has been done as inexpensively as possible. The new walls are of cinder blocks, painted, but mostly unplastered. Old walls have been used wherever possible. Some rooms have mixed in them walls of kitchen tile, plaster and cinder block; yet, with darker dadoes and lighter upper walls in buffs or greens and plenty of fluorescent lighting, the rooms look homogeneous, bright and fresh. Where we could not afford asphalt tile, we have used the cement floors freshly painted.

We decided against special circuits for timers, and other built-in features that quickly obsolesce. Batteries and timers are taken to the job. Every room has many 110-volt AC outlets, but that is all. Where dark rooms are needed, windows can be sealed against the light. There are enough telephones, squawk-boxes, and P.A. systems to make it possible easily to get contact with anyone in the building.

The Laboratories depend almost entirely upon fluorescent lighting, though the outside rooms get sun through their deep-set windows. There is plenty of ventilation, partly by fans but more by the ducts that rise to the top of the 190-foot tower. The place is, in general, like a cave, warm in winter, cool in summer, and very remote from the hurly-burly of Cambridge; but the effect, with an abundance of lighting and the many glass bricks that have been set in the walls, is one of bright modernity, constant and removed from all effects of season and weather. Acousti-Celotex on the ceilings of corridors and rooms attenuates clatter and enhances this effect of insulation. It is fun to pass from Room 208 into the dark, dingy, vaulted oak, Victorian recesses of old Memorial Hall. It is like dropping back a century in a second.

REFERENCES

1. ALLPORT, G. W., AND E. G. BORING. Psychology and social relations at Harvard University. *Amer. Psychologist*, 1946 **1**, 119–122.
2. MÜNSTERBERG, H. Emerson Hall. *Harvard Psychological Studies*, 1906, **2**, 3–39.
3. PERRY, R. B. Philosophy. In S. E. Morison, *The Development of Harvard University 1869-1929*. Harvard University Press, 1930, p. 32.

Comment

RECOMMENDATIONS TO THE NATIONAL COMMISSION[1] FOR UNESCO

The Constitution of UNESCO states that "wars begin in the minds of men" and that therefore "it is in the minds of men that the defenses of peace must be constructed." New attitudes, new understandings need to be developed. Old hatreds and traditional antagonisms need to be eliminated and replaced by attitudes of trust and confidence.

Efforts to produce these fundamental changes in men's minds can be guided by trial and error procedures as in the past. But the advent of the Atomic Age makes it imperative that such slow and costly courses of action shall no longer be followed. As in the program evaluation procedures utilized by business and government, the best available techniques must be used to achieve in a minimum of time and at least possible cost the changes demanded by the world peace objective.

Existing skills in measuring and influencing knowledge and attitudes can be used. Survey experience can indicate which methods, which content, which appeals, and which approaches are most effective in achieving the desired educational goals with specific groups. Survey research can be used to replace trial and error and thereby permit programs planned and guided by objective measurement. This can materially improve results, as experiments have time and again demonstrated.

Social scientists can make these important contributions available to the work of the United States National Commission for UNESCO through three major activities:

1. Research on projects concerned with social tensions leading to war.
2. International exchange of scientific findings, personnel, and suggestions.
3. Counseling on operational and action research in order to make techniques and resources available for the planning and evaluation of proposed and on-going projects of the National Commission of UNESCO.

The Section on Social Tensions, under the leadership of Dr. Charles S. Johnson, is making important progress in the first of these areas and is presenting recommendations to the National Commission to carry its work further. At Paris, UNESCO urged that social scientists organize for international exchange purposes in much the same manner as the physical and biological scientists are now proceeding to do, and the Panel on Functions of Social Research urges that similar organizational arrangements be created in the social science field.

The third major activity mentioned above requires, the Panel believes, the formation of a committee of consulting social scientists, drawn from the ranks of those actively engaged in human relations research. The reasons for the Panel's recommendations with regard to the third activity are outlined in greater detail. When relatively limited funds are available, it is doubly important that they be used efficiently. This can only be done when the essential facts required to plan each program are available and when systematic measures are obtained to evaluate and improve each program as it proceeds. Some of the different types of activities which might well benefit from operational or action research are those contemplated by the following Sections:

Community Participation in UNESCO. Action research can help find answers to such questions as these: what motives can dependably be tapped to arouse interest and participation at the grass-roots level; which kinds of programs produce the best results; how does this vary by size and type of community?

How Do We Teach for International Understanding? What interests do students and adults now have that can furnish the drive toward the development of understanding? Why are relatively few college seniors more internationally-minded than they were as freshmen? What educational programs are most

[1] The report of the recommendations of the Panel on Functions of Social Research to the United States National Commission for the United Nations Educational, Scientific, and Cultural Organisation. The members of the Panel are Robert Cooley Angell, Jerome S. Bruner, Dorwin Cartwright, Richard S. Crutchfield, Wayne Dennis, Clyde Hart, David Krech, Alfred McC. Lee, H. Scudder Mekeel, Donald MacKinnon, Goodwin Watson, and Rensis Likert, chairman.

effective at all educational levels in increasing among students their international understanding? What kinds of programs for adults produce the greatest increase in international understanding?

The Revision of Textbooks and Other Teaching Materials. The content of textbooks and other teaching materials can profitably be tested experimentally before being used. Does the content produce the anticipated results? If not, what kind of content would produce such desired results? How does the effectiveness of materials vary with different cultural groups? What changes are needed to achieve similar results with different cultural groups?

The International Exchange of Persons. A few systematic studies have been made of the effect of exchange programs on the attitudes of the persons involved and on discovering which phases of the program produced desirable results and which produced undesirable results. More of this action research to evaluate and guide exchange programs should measurably improve their results.

Press, Radio, and Films in UNESCO (two sections). What persons are reached by each medium? What interests of people should be tapped to obtain the greatest response to these media? What differences in emphasis are required for the results to be most effective with different cultural groups and different socio-economic levels? There are undoubtedly other elements of the UNESCO program as carried out by the National Commission to which these same skills could profitably be applied. The questions that have been suggested are merely illustrative.

The use of action research has expanded greatly in recent years. Some illustrations of the results obtained may make clearer how this tool can be used. A pamphlet that was to be used widely by OPA to explain one of its programs was tested on a small cross-section of adults. It was found that parts of it were not clear or were even misunderstood. Changes were made where the tests indicated the need. The pamphlet proved to be very effective and was used successfully for several months without any further need for revision. Another OPA pamphlet which was not tested was widely distributed to farmers. When a check was made it was found that virtually no farmers either remembered seeing it or were aware of its contents. Action research showed that the publication VOIRE at times achieved the reverse of what was intended. It was the periodical issued by the United States in France for the purpose of improving the attitudes of the French toward us and their understanding of our customs and behavior. For example, one number contained an article on penicillin just at the time when our army had refused to release any of the drug to French civilians. This produced an immediate and widespread unfavorable reaction among the French.

When a study was made to find ways of reducing incendiary fires in the southern National Forests of the United States, it was found that much of the educational material and instructions issued by the Forest Service was couched in language largely unfamiliar to the people they were intended to reach. Moreover, some of the material was presented from a point of view which was resented by the people to whom it was directed and produced a reaction opposite to that desired. These results were used in revising the materials. An informational program aimed to encourage the dairy farmers in the Great Lakes dairy region to increase their milk production, when tested, proved inadequate. It was found that much of the information emphasized was not related to the factors causing farmers not to increase production and failed to present important facts on matters which were the actual cause of farmers not going "all out" on production increases. The program was then shifted to emphasize these important facts with gratifying results.

These are but a few illustrations of many that can be cited to show how action research is being used to sharpen educational programs and make them more effective. UNESCO and the United States National Commission have a very great responsibility. It is essential that they succeed. The probability of their success will depend to no small extent on how well they utilize research in planning and operating their programs.

SUMMARY

To recapitulate, we recommend that, in addition to the Section on Social Tensions, the following be established:

1. A Section on the Social Sciences to function on the international exchange of publications,

personnel, etc., similar to the manner in which the Section on the Natural Sciences is functioning.

2. A committee of social scientists engaged primarily in human relations research to advise the National Commission on matters of action research and assist in making research facilities available when requested for any part of the program of the National Commission of UNESCO.

In the establishment of the proposed Section and Committee, it would be highly desirable for the National Commission to consult with the Social Sciences Research Council and the established national professional research societies.

A PROPOSAL FOR A CODE OF ETHICS FOR PROFESSIONAL PSYCHOLOGISTS

The following code has been adopted by the Minnesota Society for Applied Psychology. It is printed with the idea that it will be of interest to all professional psychologists.

The responsibilities of the professional psychologist to the public, to his clients, to his colleagues and to the profession generally.

I

The psychologist offering his professional services to the public is responsible for a high level of professional competence. He will, therefore, attempt to handle only those psychological problems in the solution of which he has acquired adequate skill.

II

Psychological data relating to individuals should be held confidential and divulged only under the conditions described in this code. Where the psychologist serves as a counselor or therapist, psychological data or interpretations will be divulged to others only under circumstaces agreed to by the counselee. Where the psychologist serves an industry, business, or public agency and the psychological data are regarded as the property of that organization, it is the responsibility of the psychologist to make this relationship known to the individuals tested or interviewed, and not to obtain in confidence information which cannot be retained in confidence. Where the psychologist serves in a situation with divided responsibilities, as between counselees and potential employers of the counselees, he will make clear to both the nature of his responsibilities to both and will carefully maintain the integrity of his relationship to each, to the end that he will not favor one to the disadvantage of the other.

III

The exchange of psychological information regarding individuals between professional psychologists will be accomplished only under such circumstances as will benefit the client. Where information will reflect discredit on the client or will redound to his disadvantage, it will be revealed only as necessary in the public interest or to prevent harm to the client or to others. Where the psychologist is working with members of another profession, he is also bound by the ethical code and practices of that profession with regard to release or exchange of information. Where psychological information is provided to lay persons or groups, the psychologist has the responsibility to present it in such a manner and in such terms as to make it clearly understood and to minimize the possibility of misinterpretation.

IV

In order that public regard of the profession may be upheld and promoted, the psychologist will refrain, in contacts with the public, from disparaging remarks or criticism of his professional colleagues or their techniques. The healthy spirit of criticism which has fostered experimentation, theoretical and technical development within the science of psychology is to be encouraged in professional circles, but will not be so presented to the lay public as to cast doubt upon the competence of the profession as a whole or of qualified workers in the profession.

The psychologist has a responsibility for the advancement of his sicence, and for making available to the profession generally the results of his research and experience.

Across the Secretary's Desk

NOTES TO APA MEMBERS FROM THE APA OFFICE

GROWTH OF THE APA

The 1945 *Yearbook* listed a total of 4183 members. The 1946–47 *Yearbook* listed a total of 4471 members; 1086 Fellows and 3385 Associates. The total in June, 1947 is 5090 members. In addition, we have 927 Student Affiliates, 55 State Affiliates, and 2 Division Affiliates.

RESTRICTED GOVERNMENT RECORDS

The Social Science Research Council has appointed a Committee on Government Records and Research. The committee was established to collect information on government records which social scientists would find useful for research purposes and, when necessary, to help secure the declassification of these records. If you know of psychological records whose continuing classification as secret, confidential, or restricted is materially impeding research in psychology or the social sciences, let me know. The APA office will serve as a clearing house between APA members and the SSRC committee and will be glad to put members who want help in securing the declassification of records in touch with the committee.

HOW TO JOIN AN APA DIVISION

One of the most frequent letters coming to the office asks how the writer can become an Associate or Fellow of a Division. Last January we published a summary of the requirements of each division and a statement of how to apply for divisional membership. So when we get these letters, we refer the writers to page 24 of the January, 1947 AMERICAN PSYCHOLOGIST and tell them that they must write directly to the secretaries of the divisions for application blanks. Names and addresses of all division secretaries were printed on page 126 in the April, 1947 AMERICAN PSYCHOLOGIST.

PSYCHOLOGICAL MONOGRAPHS

On April 23 four issues of the *Psychological Monographs* were mailed to subscribers: Vol. 59, 1945, numbers 275 and 276, and Vol. 60, 1946, numbers 277 and 278. Two more numbers of Volume 60, which should have appeared in 1946, will be mailed shortly.

Subscribers to this year's Club A and Club B will receive no *Monographs* until the 1947 numbers begin to appear. We hope this will be before the end of 1947.

GIFTS TO FOREIGN LIBRARIES

During the past year the APA has sent gifts of APA journals for the years 1939 through 1945 to nearly 20 foreign libraries that were destroyed, partially or wholly, during World War II. Getting all those journals collected, sorted, packed, and shipped off has been a sizeable job. We were rewarded this spring when a letter came from Professor Doctor F. J. Rutten, Psychologisch Institut, Nijmegen, Holland. He wrote:

"In September, 1947 we received your very kind letter . . . in which you informed us that a great number of journals, published by your Association, was on its way to Holland.

Our expectations were high, but I am afraid no words can describe our wonder and our gratefulness when we opened the two chests. . . .

I wish I were able to express our gratefulness in better words. But be convinced that, while reading your journals, we shall never forget the generous hand that sent them to us."

THE APA'S ADDRESS

Every APA journal shows that it was printed at two addresses, the office address in Washington and the printer's address somewhere else. The second address is carried because the postal laws and regulations require second-class mail matter to show the address where it is actually printed. Since our journals are printed in five different cities, they carry five different addresses. That confuses many of our subscribers and some of our members; they write to the APA in Lancaster, Pennsylvania or Colorado Springs, Colorado, or they send change-of-address notices to the printers instead of to the APA. The letters are forwarded, of course, but time is lost in the forwarding. All mail concerning the journals should be sent to the Washington office. That is the real address of the APA.—DAEL WOLFLE

Psychological Notes and News

A. B. HOSKINS, professor of psychology, Division Extension, West Carolina Teachers College, died March 20, 1947.

BRENT BAXTER, formerly with the Owens-Corning Fiberglass Corporation, is now director of personnel research with the Chesapeake and Ohio Railway Company at Cleveland.

WILLIAM STEVENSON, Institute of Experimental Psychology, Oxford University, England, has written saying, "It may be of interest to the members (of the APA) to learn that at long last, after a history of earlier efforts and influences of Titchener, Stout, MacDougall, and Brown at this ancient university, we have now an Honour School of Psychology and Physiology in which undergraduates may study psychology, a predilection denied to them hitherto. The Association will not be unaware, either, of the significance for psychology of the institution of new chairs in the subject at the Universities of Aberdeen, Liverpool, Sheffield, as well as at Oxford."

GEORG V. BÉKÉSY, University of Budapest, has been granted a year's leave of absence to join the staff of the Psycho-Acoustic Laboratory, Harvard University. Professor Békésy is well known for his work in psychological acoustics, especially in the dynamics of the auditory mechanism. ROBERT GALAMBOS, Emory University, will also join the Psycho-Acoustic Laboratory. He is best known for his work on the ultrasonic "radar" used by bats in flight.

FREDERICK GEHLMANN has been appointed editor of the test department of Science Research Associates. He has been assistant to Dr. L. L. Thurstone, University of Chicago.

RALPH D. NORMAN has accepted a position as assistant director of the Counseling Service and assistant professor of psychology at Princeton University, beginning July 1, 1947.

WALTER VANDYKE BINGHAM (picture above), who has served the War Department for the past seven years as Chief Psychologist and advisor of the Adjutant General regarding the classification of military personnel, requested last March to be relieved of his responsibilities on June 30. After an extended vacation on his island at Medomak, Maine, Dr. Bingham will return to Washington where he will serve part time as an expert consultant to the Secretary of War and as chairman of the Council Advisory to the Director of Personnel and Administration, War Department General Staff.

Upon acceptance of his resignation Dr. Bingham received a letter from Major General Edward F. Witsell, the Adjutant General, which reads in part as follows:

"Your service in the Army and to the War Department during two wars as an officer and as a civilian, has merited the profound respect which we have for you both in your official capacity as Chief Psychologist and as a friend. The emblem for Exceptional Civilian Service which has been awarded you is a

testimonial of the value of your service to the War Department. Those of us who have followed your career in the public service know well that your contributions have not been limited to the military sphere. We know that industry, education, and government, during the period between the World Wars, were quick to seize upon the personnel devices which through your efforts proved so effective during World War I. We know that the results of your work, which contributed to the victorious completion of the recent conflict, will continue to influence personnel utilization procedures in the Army and in our total economy."

Dr. Bingham received the Exceptional Civilian Service Award, the highest civilian award conferred by the War Department, for his work in developing and organizing the personnel system of the Army.

FORREST D. BROWN will assume his new duties as dean of students at Fresno, California, on August 1, 1947. He will have charge of psychological testing and counseling.

ANNE ANASTASI has joined the psychology department of the Graduate School of Fordham University where she will develop courses in differential psychology and related areas.

LUCILLE B. KESSLER is now psychologist in the Department of Psychology, New York State Training School for Girls in Hudson, New York.

On the retirement of J. E. W. WALLIN on July 1, RUTH L. TYNDALL with be State Co-Ordinator of Special Education, Delaware.

The Rainier State School at Buckley, Washington, formerly the Western State Custodial School, announces the appointment of H. ROBERT OTNESS as director of the department of research and training. Dr. Otness is now on the faculty of the State College of Washington, Pullman.

LEWIS R. WOLBERG, VICTOR C. RAIMY, VIRGINIA AXLINE, SAMUEL B. HADDEN, GREGORY ZILBOORG, and WILLIAM A. HUNT will be visiting lecturers at the University of Pittsburgh this summer.

NOBLE R. MCEWEN, formerly professor of education and psychology, Salem College, North Carolina, is now clinical psychologist at the Children's Service Center, Wilkes-Barre, Pennsylvania.

LLOYD N. YEPSON assumed the presidency of the American Association for Mental Deficiency at the seventy-first annual meeting of the organization which was held in St. Paul, Minnesota May 28–31.

ALFRED B. UDOW has joined Foote, Cone and Belding Advertising, New York, as account research supervisor and psychological consultant. He will be responsible for research on accounts held by the agency and is available as a consultant on psychological and statistical problems. Formerly he was with Benton and Bowles.

CLIFFORD T. MORGAN, Johns Hopkins University, gave the formal initiation speech for the Sigma Xi Society of Emory University. The title of his address was: "Recent Advancement in Human Engineering."

FREDERICK WYATT has been appointed associate professor (affiliate) in the department of Psychology, Clark University. He will continue as chief psychologist at McLean Hospital.

ARTHUR W. SHERMAN, JR., has received a $225 grant from the George Davis Bivin Foundation for research in mental hygiene in children and adolescents. He was awarded the grant for his projected study, "Personality Factors in the Psychological Weaning of College Students."

LOUIS P. THORPE will be a visiting instructor at the University of California at Berkeley during the second summer session.

The following persons have been appointed to the visiting summer school staff at George Washington University: KATHARINE OMWAKE, WENDELL CRUZE, and GORHAM LANE.

ERIKA O. FROMM has accepted an invitation from the department of psychiatry of the University of Amsterdam, Holland. The department has asked him to survey the new developments in clinical psychology and testing methods since 1939, the time when Holland was cut off from the rest of the world by war.

HAROLD SEASHORE has published a pamphlet, *All of Us have Our Troubles*, for counselors and others giving advice, concerning the large number of charlatans and well-intentioned but incapable persons advertising counseling services. Order forms may be obtained by writing to the Association Press, 347 Madison Avenue, New York 17, New York.

The American Philosophical Society has awarded fellowships from the Penrose Fund to two psychologists: DAVID H. RAAB, Brooklyn College, for his work in the neurology of hearing and auditory learning in animals, and T. C. SCHNEIRLA, American Museum of Natural History, for studies on the behavior pattern of army ants in relation to underlying ecological and physiological conditions.

WILLARD A. KERR has been named associate professor of psychology and education at Illinois Institute of Technology as of September 1. He was formerly assistant professor of industrial and social psychology at Tulane University.

On April 9, 1947 the War Department removed the restricted classification from over 50 educational and psychological tests prepared before and during the war, including Forms 1a and 1b of the Army General Classification Test. These forms, along with later forms to which they have been carefully equated, have been administered to more than 10 million men. The educational achievement tests are experimental editions which have only been partially validated; they are unstandardized. They should prove valuable mainly as sources of items for high school and college tests.

PAUL H. SCHILLER, head of the psychology department at the University of Budapest, Hungary, lectured on May 27 and 28 at the Harvard Psychological Laboratories on "Wartime Psychology in Central Europe." On June 5 he gave a seminar at Bellevue Hospital on "Interaction and Anticipation." Dr. Schiller is now on leave as a research associate at Columbia University, and will spend the next academic year at the Yerkes Laboratories, Florida.

The Illinois Association for Applied Psychology has planned an Institute of Applied Psychology in cooperation with Northwestern University, at Abbot Hall, 719 Lake Shore Drive, Chicago, August 15–16. For further information write Dr. Gordon V. Anderson, Department of Psychology, Northwestern University, Evanston, Illinois.

SUSAN K. DERI is offering introductory and advanced courses in the Szondi test during July and August at the Graduate School, New York City College.

An international Congress on Mental Health will be held from August 12–21, 1948, at Central Hall, Westminster, London. The Congress will be divided into three main sessions. The first, the International Conference on Child Psychiatry, under the auspices of the International Committee for Child Psychiatry, will hold its meetings on the mornings of August 12, 13, and 14. The theme will be foundations of mental health in childhood. The second, the International Conference on Medical Psychotherapy, under the auspices of the International Federation for Medical Psychology, will meet on the afternoons of August 12, 13 and 14. The topic will be guilt. The third session, the International Conference on Mental Hygiene, will meet on August 16–21 to discuss mental health and world citizenship. All requests for information about the Congress should be sent to the Organiser, International Congress on Mental Health, 39 Queen Anne Street, London W. 1, England.

The Kentucky Psychological Association held its Spring meeting at Western State Teachers College, Bowling Green, Kentucky. NOBLE H. KELLEY was elected president and PAULINE KLINGER continued as secretary-treasurer. The members of the executive committee are MARGARET RATLIFF, H. H. HUMPHREYS and W. E. WATSON.

HELEN S. SHACTER has been elected president of the Illinois Association for Applied Psychology, THOMAS W. HARRELL, vice-president, JULIAN H. PATHMAN, treasurer, and AGNES A. SHARP, member-at-large of the executive committee. MILTON SAFFIR, ADAM R. GILLILAND, and PHYLLIS WITTMAN are the other officers for the coming year.

Psychiatry's increasingly important place in the world of tomorrow was discussed at the 103rd annual meeting of the American Psychiatric Association. The meeting was held May 19–23 at the Pennsylvania Hotel, New York City. G. BROCK CHISHOLM, executive director of the World Health Organization, spoke on "The Future of Psychiatry." WILLIAM C. MENNINGER discussed "The Role of Psychiatry in the World Today."

The regional conference of the American Association for Mental Deficiency was held on April 13–19 at San Francisco. This association was organized in 1875 and is made up of psychologists, psychiatrists, psychiatric social workers, and educators who are interested in the training and treatment of mental defectives.

The Southeast Division of the Rorschach Institute was held in Richmond, Virginia on June 5–8. OTTO BILLIG conducted a beginning class in Rorschach technique, and DOUGLAS KELLEY gave an advanced seminar.

The Illinois Society for Mental Hygiene has formulated a legislative program to improve mental hospital conditions. A Citizens' Campaign Committee has been formed to push legislative acceptance of the Society's recommendations which will be presented to the current session of the general assembly.

Science Research Associates has recently released two new tests and a handbook. One of the tests was the *SRA Primary Mental Abilities* by L. L. and THELMA GWINN THURSTONE. This test battery measures five independent areas of intelligence for students from 11 to 17 years of age. The other test is the *SRA Reading Record* by GUY T. BUSWELL. It measures proficiency in the field of reading. The handbook, *How to Use Cumulative Records*, by ARTHUR E. TRAXLER, is designed to aid counselors.

A new journal, *Excerpta Medica*, is being published in Holland. This journal will make it possible for doctors to obtain a complete survey of medical periodicals. It will be published monthly as fifteen separate sectional journals containing abstracts of the world's literature in various fields of clinical and theoretical medicine.

The direction of this enterprise has been placed in the hands of an Editorial Board of three members, DR. M. W. WOERDEMAN, DR. A. P. H. A. DE KLEIJN, and DR. W. P. C. ZEEMAN.

The Committee on Social Adjustment in Old Age of the Social Science Research Council is preparing an information bulletin containing brief descriptions of research projects on aging, both those under way and those contemplated. Persons conducting research in this area are asked to send a description of their projects to Dr. Glen Heathers, SSRC, 230 Park Avenue, New York 17, New York, if they have not already reported to the committee.

Arrangements have been made for rooms for graduate students at Webster Hall, Wayne University, Detroit for the APA Annual Meeting, September 9–13. The charge will be $1.00 per person a night for a double room with dormitory facilities. Reservations should be made as soon as possible through Arthur E. H. Johnson, Wayne University, Detroit, Michigan.

The War Department is planning to establish a career guidance program for enlisted personnel and warrant officers. It will give these persons an opportunity for specialized education, advancement in grade, and commissioning in the officers' Reserve Corps and in the Regular Army. The Personnel Research and Procedures Branch, AGO, is a focal point in the development of this program.

Dr. Elias Katz, 650 Ocean Avenue, Brooklyn 26, New York, is instituting a study of needs for audiovisual aids in connection with the training of clinical psychologists. He would like information from psychologists on the following points: 1. List all motion pictures, slides, recordings, and other audiovisual aids which you have used in connection with the training of clinical psychologists. Indicate (a) source from which obtained, (b) how aids are used, (c) what results were noted. 2. State briefly those subjects which you include in the training of clinical psychologists which you believe could be presented more effectively by means of motion pictures, slides, recordings, charts, and displays.

The graduate department of the City College of New York is expanding its offerings for the year

1947–48. A very small number of candidates for the MA can be accepted. The fall semester deadline for filing applications for admission as an MA is August 1, and September 1 for those interested in individual courses. Application blanks and catalogues may be obtained by writing Professor Joseph E. Barmack, Department of Psychology, The City College of New York, New York 31, New York.

The Department of Public Institutions, Sussex County Court House Annex, Georgetown, Delaware, has a vancancy for a school psychologist. The requirement is an MA or its equivalent, and the salary begins at $3000. Applications should be submitted to the above address.

The American Institute for Research at Pittsburgh, which was incorporated last year as a non-profit organization to carry out a research program in personnel psychology, is working on the problem of increased safety in commercial airline flying. The project was requested by the Civil Aeronautics Administration and is being carried on under a contract with the Committee for Selection and Training of Aircraft Pilots of the National Research Council.

The Institute has formulated plans and objectives in terms of a twenty-year program of research, aimed at determination of critical requirements for all activities, the development of a guidance battery of about fifty tests, the establishment of a comprehensive list of educational objectives, and contributions to other problems of personnel psychology.

A number of permanent positions are open in Pittsburgh for assignment to projects similar to the above. In addition, there are opportunities for part time summer employment, involving the interviewing of personnel, test administration, and related work, in various locations throughout the country. The positions range from P-1 to P-8 with salaries from $2400 to $9600.

Further information and copies of the application forms may be obtained from the American Institute for Research, Cathedral of Learning, Pittsburgh 13, Pennsylvania.

The Department of Mental Hygiene and Hospitals, Virginia, has an opening for a clinical psychologist. The requirements are competence in testing, and the ability to do occasional work of a therapeutic nature. The salary is approximately $4800. Send applications to the Superintendent, Lynchburg State Colony, Colony, Virginia.

The Civil Service Commission has announced an examination for Psychologist (Personnel Counselor) for employment in VA field offices in Washington, D. C., and throughout the United States. The salary is $4,902 a year. Further information and application forms may be obtained from most first and second class post offices, from Civil Service Regional Offices, or directly from the US Civil Service Commission, Washington 25, D. C.

The Bureau of Personnel, State Capitol, Madison, Wisconsin, announces a vacancy for a Psychologist III, at the State Public School at Sparta. The salary is $260 a month, and the qualifications are three years experience in clinical work, graduation from college or university of recognized standing, with major courses in psychology, and graduate work. Applications should be made to the above address.

The Mooseheart Laboratory for Child Research, Mooseheart, Illinois, has an opening for a vocational guidance counselor at $3000 a year. Further information may be obtained by writing Dr. Martin Reymert at the above address.

The Horace H. Rackham School of Graduate Studies of the University of Michigan announces the inauguration of a program for the PhD in social psychology. The new program is under the supervision of the follwoing committee from the department of sociology and psychology: ROBERT C. ANGELL, RENSIS LIKERT, DONALD G. MARQUIS, and THEODORE M. NEWCOMB, chairman. This program is for students with the MA in psychology or sociology, or its equivalent, including certain prescribed work in each field. It is expected that the students in this program will devote part time to supervised internships which are available to them in the University of Michigan Survey Research Center and elsewhere. Inquiries may be addressed to the Program Chairman, Department of Sociology, University of Michigan, Ann Arbor.

The Connecticut State Hospital, Middletown, Connecticut has vacancies for psychological interns in the psychological laboratory. The salary is $1380, with full maintenance at a deduction of $316. Applications should be addressed to Dr. Edgar C. Yerbury, Superintendent, at the above address.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 — August, 1947 — Number 8

In this Issue

PROGRAM OF THE FIFTY-FIFTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Condensed Program 255
Registration Blank 263
Film Program 265
Program 352
Special Meetings 353
Index of Names of Participants 353

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

CARL R. ROGERS
University of Chicago
Chicago

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
DONALD G. MARQUIS University of Michigan Ann Arbor	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

WILLIAM A. HUNT	RICHARD M. ELLIOTT
EDWARD C. TOLMAN	CLARENCE H. GRAHAM
JOHN F. DASHIELL	LAURANCE F. SHAFFER

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, P.O. Box 33, Geneva, New York. Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

CONDENSED PROGRAM

TUESDAY, SEPTEMBER 9

Page

10:00 A.M. **Symposium: Putting Educational Psychology to Work, Michigan Room, Hotel Statler** 265

10:00 A.M. **Symposium: Methods for Producing and Measuring Change in Group Functioning. Part I: Basic Theoretical and Methodological Problems, Crystal Ballroom, Hotel Book-Cadillac** 265

10:00 A.M. **Symposium: Psychophysiology and Abnormal Psychology, Italian Garden, Hotel Book-Cadillac** 265

11:10 A.M. **General Psychology, English Room, Hotel Book-Cadillac** 265
11:10 A.M. Ekstein and Bellak: Ideological Warfare in the Psychological Sciences 265
11:25 A.M. Johnson: Applications of the Standard-score IQ to Social Statistics 266
11:40 A.M. Smith and Daniel: Maturational Development and Integration of Response in the Sea Turtle 266
11:55 A.M. Dressel: The Performance of Special Permission Students on Comprehensive Examinations in General Education Courses 266

11:10 A.M. **Individual Differences in Personality, Banquet Room, Hotel Statler** 267
11:10 A.M. Kinder: Development of Personality Characteristics 267
11:25 A.M. Stafford, Moore, and Hsü: The Obverse Analysis of Personality 267
11:40 A.M. Amatora: Some Elements in Teachers' and Pupils' Personalities 268
11:55 A.M. Stewart: Preferences for Literary Characters as Indicators of Personality Characteristics 268
12:10 P.M. White: Black Boy: A Value Analysis 269

1:40 P.M. **Rorschach, Banquet Room, Hotel Statler** 269
1:40 P.M. Zubin, Levy and Rust: Movement Responses in Normals, Schizophrenics, and Neurotics on the Levy Movement Cards 269
1:55 P.M. Potter and Sarason: Color in the Rorschach and Kohs Block Design 269
2:10 P.M. Rosenwald: A Comparison of the Rorschach and Behn Rorschach Tests Based on a Study of Chronic Alcoholic Subjects 270
2:25 P.M. Mayman: A Comparative Study of the Rorschach, Harrower, and Behn-Eschenberg Inkblot Tests 270

1:40 P.M. **Symposium: Binet Testing Material as a Diagnostic Instrument for Personality Studies, Michigan Room, Hotel Statler** 271

2:50 P.M. **Thematic Tests, Banquet Room, Hotel Statler** 271
2:50 P.M. Eiserer: An Exploratory Investigation of the Relative Effectiveness of Motion and Still Pictures for Stimulating Fantasies about Intra-Family Relationships 271
3:05 P.M. Bellak, Ekstein and Braverman: A Preliminary Study of Norms for the Thematic Apperception Test 271
3:20 P.M. Twitchell-Allen: A 3-Dimensional Apperception Test: A New Projective Technique 271
3:35 P.M. Ericson: A Study of the Thematic Apperception Test as Applied to a Group of Disturbed Children 272

3:00 P.M. **Symposium: Measurement of Teaching Ability, Michigan Room, Hotel Statler** 272

3:00 P.M. **Symposium: Methods for Producing and Measuring Change in Group Functioning. Part II: Specific Applications, Crystal Ballroom, Hotel Book-Cadillac** 273

3:00 P.M. **Symposium: Interprofessional Relationships, Italian Garden, Hotel Book-Cadillac** 273

4:00 P.M. **Minnesota Multiphasic Test, Banquet Room, Hotel Statler** 273
4:00 P.M. Hunt, Cass, Carp, and Winder: A Study of the Effect of the K Correction on the Differential Diagnostic Efficiency of the Minnesota Multiphasic Personality Inventory 273

Page

4:15 P.M. Phillips and Wiener: Relationships Between Selected Disability and Disease Groups and the Minnesota Multiphasic Personality Inventory 274
4:30 P.M. Seidenfeld: Behavior of Post-Polio School Children on the California Test of Personality 274
4:45 P.M. Chard and Schwartz: A New Modified Concept Formation Test 274

TUESDAY EVENING, SEPTEMBER 9

BUSINESS MEETINGS AND PRESIDENTIAL ADDRESSES OF DIVISIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

7:00 P.M. Division of Clinical and Abnormal Psychology, *Banquet Room, Hotel Statler.* Presidential Address 7:00 P.M.; Business Meeting 8:00 P.M. 275
7:00 P.M. Division of Industrial and Business Psychology, *Michigan Room, Hotel Statler.* Business Meeting 7:00 P.M. 275
7:00 P.M. Division of Theoretical-Experimental Psychology, *Bagley Room, Hotel Statler.* Business Meeting 7:00 P.M. 275
7:00 P.M. Division of Educational Psychology, *Ivory Room, Hotel Statler.* Business Meeting 7:00 P.M.; Presidential Address 8:00 P.M. 275
7:00 P.M. Division of Physiological and Comparative Psychology, *Parlor C, Hotel Statler.* Business Meeting 7:00 P.M.; Presidential Address 8:00 P.M. 275
7:00 P.M. Division of Consulting Psychology, *Parlor F, Hotel Statler.* Business Meeting 7:00 P.M.; Presidential Address 8:00 P.M. 275
7:00 P.M. Division on the Teaching of Psychology, *Parlor C, Hotel Book-Cadillac.* Business Meeting 7:00 P.M. 275
7:00 P.M. Division of General Psychology, *Founders Room, Hotel Book-Cadillac.* Presidential Address 7:00 P.M., Business Meeting 8:00 P.M. 275
8:00 P.M. Division of Esthetics, *Parlor B, Hotel Statler.* Business Meeting 8:00 P.M. 275
8:00 P.M. Division of School Psychologists, *Parlor D, Hotel Statler.* Presidential Address 8:00 P.M.; Business Meeting 9:00 P.M. 275
8:00 P.M. Division of Psychologists in Public Service, *Parlor E, Hotel Statler.* Business Meeting 8:00 P.M. 275
8:00 P.M. Division of Counseling and Guidance Psychologists, *Crystal Ballroom, Hotel Book-Cadillac.* Business Meeting 8:00 P.M. 275
8:00 P.M. Division of Personality and Social Psychology, *Italian Garden, Hotel Book-Cadillac.* Business Meeting 8:00 P.M.; Presidential Address 9:00 P.M. 275
8:00 P.M. Division on Evaluation and Measurement, *English Room, Hotel Book-Cadillac.* Business Meeting 8:00 P.M.; Presidential Address 9:00 P.M. 275
8:00 P.M. Division on Childhood and Adolescence, *Washington Room, Hotel Book-Cadillac.* Presidential Address 8:00 P.M.; Business Meeting 9:00 P.M. 275
8:00 P.M. Division of Military Psychology, *Reception Room, Hotel Book-Cadillac.* Business Meeting 8:00 P.M. 276

WEDNESDAY, SEPTEMBER 10

8:50 A.M. Self-Insight and Therapy, Banquet Room, Hotel Statler 276
8:50 A.M. Robinson and Shor: Sources of Consistency in Some Self-Evaluation and Projection Situations 276
9:05 A.M. Holt: The Measurement of Self-Insight and Some of Its Personological Correlates 276
9:20 A.M. Jensen and Kende: A Case of Sadism Expressed Through Pictorial Mutilations 277
9:35 A.M. Martin: The Status of a Case of Hypogonadism Five Years After Treatment Cessation 277

8:50 A.M. Development of Intellectual Functions, Michigan Room, Hotel Statler 278
8:50 A.M. Skodak and Skeels: A Follow-up Study of the Mental Development of One Hundred Adopted Children in Iowa 278
9:05 A.M. Templin: Explanation of Causes of Natural Phenomena by Children with Normal and Defective Hearing 278
9:20 A.M. Coppock and Mowrer: "Spontaneous" Responses as Rehearsal: A Note on "Overt Thinking" in Animals 279

Page

9:35 A.M. Mowrer: On the Utility of Parrots and Other Birds in the Study of Language Development—A Preliminary Report ... 279

10:00 A.M. Research and Applications in Special Fields, Michigan Room, Hotel Statler ... 280
10:00 A.M. Lee: Propaganda Techniques of Religious Groups ... 280
10:15 A.M. Sherif: The Necessity of Considering Current Issues as Part and Parcel of Persistent Major Problems ... 280
10:30 A.M. Cooper: A Psychological Handbook for Diplomats: Proposal and Plan ... 280
10:45 A.M. Wyatt: Analysis of a Popular Novel. (Case Study of a Collective Day-dream.) ... 280

10:00 A.M. Evaluation and Measurement I, Bagley Room, Hotel Statler ... 281
10:00 A.M. Harris and Cronbach: The Status of Psychological Testing in Japan ... 281
10:15 A.M. Greene, Findley, Couey and Staton: The Evaluation of Instruction in the Air University ... 281
10:30 A.M. Gottsdanker: Relative Contributions of Combined Input Performances to Output Error ... 282
10:45 A.M. Dudek: Dependence of Factorial Composition of Aptitude Tests upon Population Differences among Pilot Trainees ... 282

10:00 A.M. Schizophrenia, Banquet Room, Hotel Statler ... 283
10:00 A.M. Rashkis: Three Types of Thinking Disorder: An Investigation of the Behavior on Special Tests of Schizophrenics, General Paretics, and Cerebral Arteriosclerotics ... 283
10:15 A.M. Dubin and Thaler: The Use of Psychological Tests on Schizophrenic Patients Before and After Shock Treatment ... 283
10:30 A.M. Wittman: Diagnostic and Prognostic Significance of Prodromal Factors in Schizophrenic Psychoses ... 283
10:45 A.M. Rabin: Effects of Electric Shock Treatment upon Some Aspects of Personality and Intellect ... 284

10:00 A.M. Report of the American Board of Examiners in Professional Psychology, Crystal Ballroom, Hotel Book-Cadillac ... 284

10:00 A.M. Symposium: Relationship Between Research and Service Functions of the School Psychologists, Italian Garden, Hotel Book-Cadillac ... 284

11:10 A.M. Personality Dynamics, Banquet Room, Hotel Statler ... 284
11:10 A.M. Hanfmann, Stein and Bruner: Personality Factors in the Temporal Development of Perceptual Organization: A Methodological Note ... 284
11:25 A.M. Thiesen and Meister: A Laboratory Investigation of Measures of Frustration Tolerance of Pre-Adolescent Children: A Preliminary Report ... 285
11:40 A.M. Bruner, Postman, and McGinnies: Personal Values as Determinants of Perceptual Selection ... 285
11:55 A.M. Deri: The Effect of Electric Shock Treatment on Depressive Patients ... 286

11:10 A.M. Evaluation and Measurement II, Bagley Room, Hotel Statler ... 286
11:10 A.M. Cureton: The Verbal Relations Factor and Vocabulary ... 286
11:25 A.M. Bennett: The Evaluation of Pairs of Tests for Guidance Use ... 287
11:40 A.M. Findley and Greene: A Statistical Index of Participation in Discussion ... 287
11:55 A.M. Betts: Test Calibration for Categorical Classification ... 287

1:40 P.M. Personality, Banquet Room, Hotel Statler ... 288
1:40 P.M. Levinson: "Projective Questions" in the Study of Personality and Ideology ... 288
1:55 P.M. Symonds: Interpreting the Picture-Story (TAT) Method ... 288
2:10 P.M. Marshall: A Study of the Personality of Alcoholic Males ... 289
2:25 P.M. Glad: Attitudes and Experiences of American-Jewish and American-Irish Male Youth as Related to Adult Inebriety Rates ... 289

1:40 P.M. Audition, Michigan Room, Hotel Statler ... 290
1:40 P.M. Garner: The Loudness of Repeated Short Tones ... 290
1:55 P.M. Pollack: The Threshold of Audibility and the Threshold of Tonality ... 290
2:10 P.M. Miller: An Auditory Analogue of Visual Flicker ... 291
2:25 P.M. Meyerson: A Verbal Audiometric Test for Young Children ... 291

Page

2:50 P.M. Personality Tests, Banquet Room, Hotel Statler 291
2:50 P.M. Bear: The Development of Diagnostic Tools to Further Remedial Instruction 291
3:05 P.M. Hahn: An Evaluation of Counselor Consistency 292
3:20 P.M. Pepinsky and Pepinsky: Implications of Social Dynamics for Methods of Therapy with College Students 292
3:35 P.M. Bordin: Relative Correspondence of Professed Interests to Kuder and Strong Interest Test Scores 293

2:50 P.M. The Human Retina, Bagley Room, Hotel Statler 293
2:50 P.M. Johnson: The Electrical Response of the Human Retina During Dark-adaptation 293
3:05 P.M. Berry: A Comparison of Threshold Acuities for Vernier, Real Depth, and Stereoscopic Tasks Under Similar Conditions 294
3:20 P.M. Riggs and Johnson: Electrical Measurements of the Adaptation of the Human Retina to Constant Levels of Illumination 294
3:35 P.M. Bartlett: The Relationship Between Critical Flicker Frequency and Flash Duration 295

3:00 P.M. Symposium: Teaching of Psychology, Michigan Room, Hotel Statler 295

3:00 P.M. Symposium: Basic Principles in Directive and Non-Directive Counseling, Crystal Ballroom, Hotel Book-Cadillac 295

3:00 P.M. Symposium: Roles of Action and Basic Research in Social Psychology, Italian Garden, Hotel Book-Cadillac 295

4:00 P.M. Tests, Banquet Room, Hotel Statler 296
4:00 P.M. Wiener: Subtle and Obvious Keys for the Minnesota Multiphasic Personality Inventory 296
4:15 P.M. Triggs: A Study of the Relationship of Measured Interests to Measured Mechanical Aptitude, Personality, and Vocabulary 296
4:30 P.M. Kendall and Hahn: The Use of Tests in the Selection of Medical Students by the College of Medicine of Syracuse University 297
4:45 P.M. Moore: A Comparison of the Moore Eye-Hand Coordination and Color Matching Test with Other Dexterity Tests 297

4:00 P.M. Visual Perception, Bagley Room, Hotel Statler 298
4:00 P.M. Wherry: A Factorial Study of Visual Acuity, Depth, and Phoria Measurements with Three Commercial Screening Devices 298
4:15 P.M. Reese: The Anchoring Effect in the Direct Estimation of Visual Inclination 298
4:30 P.M. Beck: Some Experimental and Theoretical Relationships Between Area and Brightness at Suprathreshold Levels 298
4:45 P.M. Sackett: The Effect of Knowledge of Scores on Learning a Simulated Tracking Problem 299

8:00 P.M. Meeting of the Council of Representatives, English Room, Hotel Statler 299
8:15 P.M. Addresses by Foreign Psychologists, Rackham Memorial Building. 299
8:15 P.M. Invited address, Henry Brosin, Rackham Memorial Building 300

THURSDAY, SEPTEMBER 11

8:50 A.M. Animal Learning I, Banquet Room, Hotel Statler 300
8:50 A.M. Daniel: How Cooperatively Do Individual Rats Solve a Problem in a Social Situation? 300
9:05 A.M. Grice: The Relation of Secondary Reinforcement to Delayed Reward in Visual Discrimination Learning 300
9:20 A.M. Kendler: The Effect of a Various Number of Reinforcements in a T-Maze Upon Spatial Learning in the White Rat 300
9:35 A.M. Solomon: The Role of Effort in the Performance of a Distance Discrimination by Albino Rats 301

8:50 A.M. Psychological Tests, Michigan Room, Hotel Statler 301
8:50 A.M. Bernreuter: Differential Prediction of Scholastic Success 301
9:05 A.M. Gilliland: An Intelligence Test for Early Infancy 302
9:20 A.M. Harris: An Item Analysis and Evaluation of the Merrill-Palmer Scale of Mental Tests for Preschool Children 302

Page

9:35 A.M. Henneman and Mitchell: A Critical Examination of the Concept of "Accident-Proneness" as Applied to Aircraft Pilots ... 302

10:00 A.M. Animal Learning II, Banquet Room, Hotel Statler ... 303
10:00 A.M. Miller: Experiments on the Strength of Acquired Drive Based on Hunger ... 303
10:15 A.M. Webb: The Role of an Irrelevant Drive in Response Evocation in the White Rat ... 303
10:30 A.M. Lawrence: Transfer between Discriminations Involving the Same Cues but Different Responses ... 303
10:45 A.M. Snygg: Mazes Run Without Error on the First Trial ... 304

10:00 A.M. Psychometric Society, Michigan Room, Hotel Statler ... 304
10:00 A.M. Bechtoldt: Factorial Investigation of the Perceptual-Speed Factor ... 304
10:15 A.M. Guilford: The Prediction of Categories from Measurements ... 305
10:30 A.M. Coombs: The Analysis of Qualitative Variables ... 305
10:45 A.M. Humm and Humm: Compensations for Subjects' Response-Bias in a Measure of Temperament ... 305
11:00 A.M. Lazarsfeld: Factor Analyses of Qualitative Attributes ... 306

10:00 A.M. Symposium: Current Views and Practices in Child Therapy, Crystal Ballroom, Hotel Book-Cadillac ... 306

10:00 A.M. Symposium: Current Activities in Military Research, Italian Garden, Hotel Book-Cadillac ... 306

11:10 A.M. Learning I, Banquet Room, Hotel Statler ... 306
11:10 A.M. Hebb: The Effects of Early Experience on Problem-Solving at Maturity ... 306
11:25 A.M. Riesen: Visual Discriminations by Chimpanzees after Rearing in Darkness ... 307
11:40 A.M. Waters: An Experimental Test of the Dynamic Character of Expectancy ... 307
11:55 A.M. Davis: Motor Components of Responses to Auditory Stimuli: The Relation of Stimulus Intensity and Instructions to Respond ... 308

1:40 P.M. Learning II, Banquet Room, Hotel Statler ... 308
1:40 P.M. Schiller: Detour Experiments in Rats ... 308
1:55 P.M. Ammons: A Determination of Empirical Constants in Rotary Pursuit Performance ... 308
2:10 P.M. Kogan: Similarity, Goal Gradient, and Interference in Maze Learning ... 309
2:25 P.M. Wickens: The Alteration at the Initiating Stimulus by the Response as a Learning Mechanism. I. Its Operation in Instrumental Finger Conditioning ... 309

1:40 P.M. Test Construction Technique, Michigan Room, Hotel Statler ... 309
1:40 P.M. Gilinsky: The Influence of the Procedure of Judging on the Halo Effect ... 309
1:55 P.M. Markey: Consistency of Descriptive Personality Phrases in the Forced Choice Technique ... 310
2:10 P.M. Dailey: Techniques for Estimating the Optional Weight of the "Wrongs" in Scoring Printed Tests ... 310
2:25 P.M. Brandt: How Effective are Subject Matter Specialists in Technical Test Construction ... 311

2:50 P.M. Human Learning, Banquet Room, Hotel Statler ... 311
2:50 P.M. Bugelski: An Attempt to Reconcile the "Unlearning" and Reproductive Inhibition Controversy ... 311
3:05 P.M. Kimble: Reminiscence in Motor Learning as a Function of the Length of Interpolated Rest ... 312
3:20 P.M. Postman and Egan: Rate of Recall as a Measure of Retention ... 312
3:35 P.M. Taylor: Spread of Effect in One-trial Learning in Relation to the Guessing-Sequence Hypothesis ... 313

3:00 P.M. Childhood and Adolescence, Italian Garden, Hotel Book-Cadillac ... 313
3:00 P.M. Edgerton, Britt, and Norman: Physical Differences Between Ranking and Non-ranking Adolescent Boys in a National Search for Scientific Talent ... 313
3:15 P.M. Irwin: The Mastery of Vowel and Consonant Sounds During the Period of Infancy ... 314
3:30 P.M. *Bayley: The Relation of Age and Test to Consistency of Mental Growth from Birth to Eighteen Years* ... 314
3:45 P.M. *Roberts: Socio-economic Status and Academic Performance of Negro College Women, North and South* ... 314
4:00 P.M. Mathews: Treatment of a Child in Conflict ... 315

Page

3:00 P.M. **Symposium: New Procedures in Clinical Psychology, Crystal Ballroom, Hotel Book-Cadillac** 315

3:00 P.M. **Symposium: Criteria for Validation of Measures of Military Leadership, Michigan Room, Hotel Statler** 315

4:00 P.M. **The Continuity vs. Non-Continuity Issue, Banquet Room, Hotel Statler** 315
4:00 P.M. Ehrenfreund: An Experimental Test of the Continuity Theory of Discrimination Learning with Pattern Vision 316
4:15 P.M. Prentice: "Continuity" *vs.* "Non-Continuity" In Human Learning 316
4:30 P.M. Leeper: The Continuity, Non-Continuity Issue in Learning—An Appraisal and a Re-formulation 316

8:15 P.M. **Presidential Address, Rackham Memorial Building. Reception immediately following address:** .. 317

FRIDAY, SEPTEMBER 12

8:50 A.M. **Problems of Re-Educating People in the Democratic Way of Life, Banquet Room, Hotel Statler:** .. 317
8:50 A.M. Fensterheim and Birch: The Influence of Group Ideology on Individual Behavior 317
9:05 A.M. Bühler: The Problem of German Re-Education 318
9:20 A.M. Bondy: Education to Clear Thinking and Greater Consciousness as Part of the Re-Educational Program in Germany 318
9:35 A.M. Citron and Harding: An Experiment in Training Groups of People to Answer Anti-Minority Remarks in an Effective Fashion 318

8:50 A.M. **Animal Behavior I, Bagley Room, Hotel Statler** 319
8:50 A.M. Farber: Response Fixation Under Anxiety and Non-Anxiety Conditions 319
9:05 A.M. Bijou: A New Conditioned Response Technique to Investigate "Experimental Neurosis" in the Rat 319
9:20 A.M. Patton: The Incidence of Middle-Ear Infection in Albino Rats Susceptible to Sound-Induced Seizures 320
9:35 A.M. Searle: Application of the "Inverted" Factor Analysis Technique to the Study of Hereditary Behavior Types in Rats 320

8:50 A.M. **Professional Services, English Room, Hotel Book-Cadillac** 321
8:50 A.M. Starch: The Buyometer: A New Technique for Measuring Buying Resulting From Reading of Advertisements 321
9:05 A.M. Moore: Current Tests in Industry 321
9:20 A.M. Browne: The Occupational Classification of Federal Relief Clients and Its Relationship to Educational Level, Age, and Race 321
9:35 A.M. Trowbridge: "Counseling" Agencies in Greater Boston 322

10:00 A.M. **Problems in Combatting Racial and Religious Prejudice, Banquet Room, Hotel Statler** 322
10:00 A.M. Jahoda and Ackerman: Some Remarks on the Motivation for Anti-Semitic Attitudes 322
10:15 A.M. Bettelheim, Janowitz and Shils: A Study of the Social, Economic, and Psychological Correlates of Intolerance Among Urban Veterans of Enlisted Rank 323
10:30 A.M. Saenger and Gordon: Psychological Problems of Minority Group Members in Utilizing Anti-Discrimination Legislation 323
10:45 A.M. Hogrefe, Evans and Chein: The Effects on Intergroup Attitudes of Participation in an Inter-racial Play Center 324

10:00 A.M. **Animal Behavior II, Bagley Room, Hotel Statler** 324
10:00 A.M. Hall and Witt: The Genetics of Audiogenic Seizures in House Mice 324
10:15 A.M. Scott: Non-Adaptive Behavior Resulting from a Series of Defeats in Fighting Mice 324
10:30 A.M. Stellar: The Effect of Experimental Alteration of Metabolism on the Hoarding Behavior of the White Rat 325
10:45 A.M. Riess: Some Applications of the General Adaptation Syndrome to Current Problems in Experimental Shock in Animals 325

Page

10:00 A.M. **Measurement and Prediction of Proficiency, English Room, Hotel Book-Cadillac** ... 325
10:00 A.M. Baier: Selection and Evaluation of West Point Cadets ... 325
10:15 A.M. Hausman: An Evaluation of Instrument Flying Training Records as Criteria of Pilot Proficiency ... 326
10:30 A.M. Page: A Cumulative Record of Naval Aviator Proficiency ... 326
10:45 A.M. Houtchens and Betts: Word Portraits of Army Prisoners ... 327

10:00 A.M. **Symposium: Psychotherapy and Counseling, Crystal Ballroom, Hotel Book-Cadillac** ... 327

10:00 A.M. **Symposium: Discussion of Job Opportunities in Four Specialty Areas, Italian Garden, Hotel Book-Cadillac** ... 327

11:10 A.M. **Survey Methods in Social Psychology, Banquet Room, Hotel Statler** ... 328
11:10 A.M. Flowerman: Polls on Anti-Semitism: An Experiment in Validity ... 328
11:25 A.M. Cahalan and Tamulonis: The Effect of Question Variations in Public Opinion Surveys ... 328
11:40 A.M. Kornhauser: Problems and Possibilities in Polling Experts on Social Issues ... 329
11:55 A.M. Haas and Cook: The Use of the Community Self-Survey in Combatting Discrimination ... 329

11:10 A.M. **Diet and Efficiency, Bagley Room, Hotel Statler** ... 329
11:10 A.M. Brozek, Franklin, Guetzkow and Keys: Recovery after 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-Starvation in Man. Part I. Experimental Design and Physical Changes ... 329
11:25 A.M. Franklin, Brozek, Guetzkow and Keys: Recovery After 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-Starvation in Man. Part II. Motor, Sensory, and Intellective Functions ... 330
11:40 A.M. Guetzkow, Brozek, Franklin and Keys: Recovery After 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-Starvation in Man: Part III. Personality ... 330
11:55 A.M. Bare: The Sodium Chloride Preference of the White Rat in a Free-Choice Situation ... 331

11:10 A.M. **Human Efficiency, English Room, Hotel Book-Cadillac** ... 331
11:10 A.M. Travis and Kennedy: Prediction and Automatic Control of Alertness. I. Experiments on Control of Lookout Alertness ... 331
11:25 A.M. Kennedy and Travis: Prediction and Automatic Control of Alertness. II. Experiments on Control of Alertness During a Continuous Tracking Performance ... 331
11:40 A.M. Walker, Matheny, and Hemphill: The Evaluation of a Psycho-motor Task for Use in the Study of Warning Signals ... 332
11:55 A.M. Van Saun: An Initial Study of Principles Related to Aircrew Workplace Layout ... 332

1:40 P.M. **Measurement of Social Behavior, Banquet Room, Hotel Statler** ... 332
1:40 P.M. Edwards and Kilpatrick: The Scale-Discrimination Method for Measuring Social Attitudes ... 332
1:55 P.M. Rotter and Wickens: The Consistency and Generality of Ratings of "Social Aggressiveness" Made from Observation of Role Playing Situations ... 333
2:10 P.M. VanDusen: Method for Establishing Leadership Criteria ... 333
2:25 P.M. Maurer: Measuring Leadership in College Women by Free Association ... 334

2:00 P.M. **Symposium: Problems of Statistical Method in Current Clinical Research, Crystal Ballroom, Hotel Book-Cadillac** ... 334

2:00 P.M. **Symposium: Critique of Experimental Psychology's Contribution to Equipment Design for Human Use, Italian Garden, Hotel Book-Cadillac** ... 335

2:00 P.M. **Symposium: Methodological Problems in Research on Maturity and Old Age, English Room, Hotel Book-Cadillac** ... 335

2:50 P.M. **Social Psychology, Banquet Room, Hotel Statler** ... 335
2:50 P.M. Kaplon: The Observational Method in Radio Audience Measurement ... 335
3:05 P.M. Cattell: The Psychological Dimensions of Groups ... 335

Page

3:20 P.M. Hartmann: Studies in the Development of Democratic Concepts and Behavior ... 336
3:35 P.M. Harding, Citron, and Selltiz: Personal Incidents: A Study of the Effectiveness of Various Types of Answers to Anti-Minority Remarks ... 336

2:50 P.M. Brain Function, Bagley Room, Hotel Statler ... 336
2:50 P.M. Barnes: Physiological and Psychological Factors in Electroencephalography ... 337
3:05 P.M. Halstead: Critical Fusion Frequency and Prefrontal Lobes in Man ... 337
3:20 P.M. Kellogg: "Forced" Rotation Produced by Cortical Lesions in the Dog ... 337

4:00 P.M. Annual Report to APA Members, Banquet Room, Hotel Statler ... 338

7:00 P.M. Division on Maturity and Old Age. Presidential Address, Founders Room, Hotel Book-Cadillac ... 338

8:15 P.M. Invited Address: Ralph M. Evans, Rackham Memorial Building ... 338

SATURDAY, SEPTEMBER 13

8:50 A.M. Industrial Psychology, Banquet Room, Hotel Statler ... 338
8:50 A.M. Covner: Resistance to Psychological Programs in Industrial Organizations ... 338
9:05 A.M. Bellows and Scholl: Development and Evaluation of Methods for Personnel Turnover Control ... 338
9:20 A.M. Humes: The Use and Results of Instructional Demonstrations for Supervisory Training Groups ... 338
9:35 A.M. Lawshe: The Reliability of Two Job Evaluation Systems ... 339

8:50 A.M. Motor Problems in Equipment Design, Michigan Room, Hotel Statler ... 339
8:50 A.M. Ellson, Hill and Gray: Wave Length and Amplitude Characteristics of Tracking Error Curves ... 339
9:05 A.M. Taylor: A Study of the Acceleration Pattern of Manual Corrective Responses ... 340
9:20 A.M. Grether: A Study of Several Design Factors Influencing Human Efficiency in Hand and Foot Operation of Controls ... 340
9:35 A.M. Fitts: A Study of Proprioceptive Location Discrimination as Indicated by Arm-Hand Positioning Reactions ... 341

10:00 A.M. Morale and Human Satisfaction, Banquet Room, Hotel Statler ... 341
10:00 A.M. Sparks: Construction and Standardization of the Army Activities Preference Blank ... 341
10:15 A.M. Speer: The Vocational Interests of Engineering and Non-engineering Students ... 341
10:30 A.M. DiMichael and Dabelstein: Work Satisfaction and Work Efficiency of Vocational Rehabilitation Counselors as Related to Measured Interests ... 342
10:45 A.M. Richardson: A Morale Study in a Typical Manufacturing Concern ... 343

10:00 A.M. Emotion, English Room, Hotel Book-Cadillac ... 343
10:00 A.M. Lacey: Sex Differences in Somatic Reactions to Stress ... 343
10:15 A.M. Malmo, Shagass, and Davis: Pain as a Standardized Stimulus for Eliciting Differential Physiological Responses in Anxiety ... 344
10:30 A.M. Mahl: Gastric Secretion of Hydrochloric Acid in Dogs Maintained in a Chronic Fear State by Repeated Pain-Fear Stimulation ... 344
10:45 A.M. Arnold: Brain Function in Emotion ... 344

10:00 A.M. Interpretation of Instruments, Bagley Room, Hotel Statler ... 345
10:00 A.M. Loucks: Evaluation of Aircraft Attitude Indicators on the Basis of Link Trainer Performance ... 345
10:15 A.M. Warrick: Direction of Motion Preferences in Positioning Visual Indicators by Means of Control Knobs ... 345
10:30 A.M. Christensen: An Analysis of Scale Reading Errors ... 346
10:45 A.M. Chapanis: Accuracy of Interpolation between Scale Markers as a Function of Scale Interval Number ... 346

10:00 A.M. Symposium: Achievement and Productivity in Maturity and Old Age, Michigan Room, Hotel Statler ... 346

10:00 A.M. Symposium: Evaluation of Counseling, Crystal Ballroom, Hotel Book-Cadillac ... 347

Page

10:00 A.M. **Symposium: The Role of the Psychologist in Promoting a Long-Enduring Peace, Italian Garden, Hotel Book-Cadillac** ... 347

11:10 A.M. **Visual Problems in Equipment Design, Banquet Room, Hotel Statler** ... 347
11:10 A.M. Williams: The Effect of Certain Illumination Variables on the Visibility of Signals on Cathode Ray Screens ... 347
11:25 A.M. Crook, Hoffman and Wessell: Effect of Vibration on Legibility of Numerical Material ... 347
11:40 A.M. Williams and Grether: Legibility of Instrument Dials as a Function of Dial Diameter and the Spacing of Scale Division ... 348

11:10 A.M. **GSR and Extirpation, English Room, Hotel Book-Cadillac** ... 348
11:10 A.M. Grant and Schneider: Intensity of the Conditioned Stimulus and Strength of Conditioning of the GSR ... 348
11:25 A.M. Haggard and Jones: The Comparative Discriminatory Value of Various Measures of GSR for Words of Differing Affective Value ... 349
11:40 A.M. Lacey and Siegel: An Appropriate Unit for the Measurement of the Galvanic Skin Response ... 349
11:55 A.M. Kappauf: Some Observations on the Effect of Removal of the Visual Cortex on Reflex Responses in the Cat ... 349

11:10 A.M. **Aptitude Prediction, Bagley Room, Hotel Statler** ... 350
11:10 A.M. Lundin: The Development and Validation of a Set of Musical Ability Tests ... 350
11:25 A.M. Pedersen: The Development of Two Machine-Administered Scales of Stenographic Proficiency ... 350
11:40 A.M. Vernier, Criswell and Howell: Use of a Specialized Interview Technique for the Collection of Criteria Data ... 351
11:55 A.M. Roeder: The Roeder General Aptitude Profile ... 351

REGISTRATION BLANK

Please send this form in as early as possible to:

Edward T. Raney
7301 Woodward Avenue
Detroit 2, Michigan

If you turn in this blank before the meeting you won't have to stand in line to register, and we will be able to get all the clerical work done before the meeting. Therefore will you please send in the following information blank as soon as your plans to come to the meeting have been made.

NAME: ..... (Last) ..... (First) ..... (Middle)

TITLE: .....

ADDRESS: ..... (Street) ..... (City) ..... (State)

BUSINESS ADDRESS: ..... (Street) ..... (City) ..... (State)

DIVISION: .....

HOTEL: .....

Date of arrival: ..... ; Date of departure

FILM PROGRAM

Rackham Memorial Building

ORIGINAL PRESENTATIONS

1:00 P.M., Tuesday, September 9 and Wednesday, September 10, Room 3.

I. CHILD DEVELOPMENT

Meeting Emotional Needs of Childhood: The Groundwork of Democracy. *L. Joseph Stone, Vassar College.*

Measuring Physical Abilities. *Ann Espenshade and Harold E. Jones, University of California.*

II. COMPARATIVE PSYCHOLOGY

Effects of Hemidecortication in the Dog. *W. N. Kellogg, University of Indiana.*

The Psychosomatics of Drug Dissociation. *Edward Girden, Brooklyn College.*

Behavioral Characteristics of the Rhesus Monkey. *C. R. Carpenter, The Pennsylvania State College.*

Social Behavior of Rhesus Monkeys. *C. R. Carpenter, The Pennsylvania State College.*

Chimpanzees Reared in Darkness. *Austin H. Riesen and George Clark, Yerkes Laboratories.*

Requests will be accepted at the meetings for repeat showings of the above films.

REVIEWS OF PSYCHOLOGICAL AND PSYCHIATRIC FILMS

9:00 A.M. to 12:00 M., Wednesday, Thursday, Friday, and Saturday, Rooms 7 and 201

This program will consist of selected psychological and psychiatric films.

FILM REQUEST PROGRAM

Rooms 203, 205, and 210

Any films shown at the meetings may be requested for projection. All Psychological Cinema Register films will be available for request projections. This will be a continuous program throughout the meeting.

PROGRAM

TUESDAY, SEPTEMBER 9

SYMPOSIUM: PUTTING EDUCATIONAL PSYCHOLOGY TO WORK

Sponsored by the Division of Educational Psychology

10:00 A.M., Tuesday, September 9

Michigan Room, Hotel Statler

The problem of relating psychology to the needs of teachers and administrators; knowledge derived in laboratory situations as compared with knowledge obtained in school settings; correlating research knowledge with teaching experience; conferences with teachers on the job as a means of training; evaluation of the introductory course; need for research.

GERTRUDE HILDRETH, Chairman

Participants: J. B. SCHOOLLAND, A. S. BARR, ROBERT A. DAVIS, and A. R. GILLILAND

SYMPOSIUM: METHODS FOR PRODUCING AND MEASURING CHANGE IN GROUP FUNCTIONING

Sponsored by the Society for the Psychological Study of Social Issues

Part I: Basic Theoretical and Methodological Problems

10:00 A.M., Tuesday, September 9

Crystal Ballroom, Hotel Book-Cadillac

Part II: Specific Applications

3:00 P.M., Tuesday, September 9

Crystal Ballroom, Hotel Book-Cadillac

The symposium will examine the basic theoretical and methodological problems encountered in attempts to produce and measure changes in group functioning. Four areas of application will provide concrete illustrations: intensive training in human relation skills; group therapy with delinquents; the consultant role in organizational change; and the place of research in governmental administration.

DORWIN CARTWRIGHT, Chairman

Participants: DWIGHT W. CHAPMAN, STUART W. COOK, JOHN R. P. FRENCH, JR., MASON HAIRE, ELLIOTT JAQUES, DAVID KRECH, RONALD LIPPITT, THEODORE NEWCOMB, and FRITZ REDL

SYMPOSIUM: PSYCHOPHYSIOLOGY AND ABNORMAL PSYCHOLOGY

Sponsored by the Division of Clinical and Abnormal Psychology

10:00 A.M., Tuesday, September 9

Italian Garden, Hotel Book-Cadillac

WARD C. HALSTEAD, Chairman

Speakers: WARREN S. MCCULLOCH, "Mechanisms That Know and Want"

CHESTER W. DARROW, "Psychophysiology of Brain Regulation"

WARD C. HALSTEAD, "Brain and Ego Function"

NORMAN R. F. MAIER, "Frustration Mechanisms"

GENERAL PSYCHOLOGY

11:10 A.M., Tuesday, September 9

English Room, Hotel Book-Cadillac

JOHN E. ANDERSON, Chairman

11:10 A.M. Ideological Warfare in the Psychological Sciences. (Towards a Theory of Determinants in Psychology.) *Rudolph Ekstein, The Menninger Foundation, and Leopold Bellak, New York Medical College.* (1)*

PROBLEM: The student of the psychological sciences is faced with many, often opposing schools of psychological thought and practice. He finds himself in a maze of different conceptual frames of reference, claims, proofs and refutations. This presentation reports on research that aims at a semantic clarification and at psychological understanding of the bases of the differences as well as a sharpening of a neglected research tool in psychology: the "professional self."

PROCEDURE: Certain basic principles of experimental and dynamic psychology are investigated. The main effort consists in a methodological and psychological investigation of psychoanalytic basic tenets and recent reformulations as expressed in the writings of Freud, Horney, Rank, Rogers, Taft, Sullivan, and others.

RESULTS: It is suggested that psychology as well as other sciences has at its core ideological, that is, dogmatic elements. These elements do not exclude scientific proof but refer to the "choice" of language, the choice of function, certain psychological problems of the in-

*Papers are serially numbered throughout the program.

vestigator, and the "psychological climate" of the group to which he "belongs." The differences between psychological schools usually do not pertain to the realm of understanding and prediction—the realm of pure science—but rather to the control function of psychological science.

CONCLUSIONS: These studies suggest a relativistic point of view, permit fuller communication between groups, and make psychological findings more accessible to scientific investigation and experimentation. They should lead to growth of the professional self through fuller awareness of the ideological components of our work. Ideological aspects then will be limited to their creative function. The paper suggests psychological process, movement towards the new rather than "final" results.

11:25 A.M. Applications of the Standard-score IQ to Social Statistics. *Donald M. Johnson, University of Illinois.* (2)

PROBLEM: To facilitate integration of several sets of published results on group differences in intelligence by converting scores to one standard scale.

POPULATION: Several broad samples of children and adults in U. S., England and Russia, 1918 to 1945, grouped by region (in U. S.) and by occupational level.

PROCEDURE: Intelligence-test scores, when possible, are converted to a standard scale with a mean of 100 and an SD of 16.

RESULTS: 1. The method is reasonably adequate.

2. Geographic differentials of intelligence in the U. S. have been quite stable over a period of 35 years.
3. Occupational differentials of intelligence in the U. S. have been quite stable over the same period.
4. Occupational differences in Russia shortly after the Revolution, in England, and in the U. S. are quite similar.
5. Occupational differences in intelligence in the U. S. are considerably greater than sectional differences.

11:40 A.M. Maturational Development and Integration of Response in the Sea Turtle. *Karl U. Smith, University of Wisconsin, and Robert S. Daniel, University of Missouri.* (3)

PROBLEM: The sequential appearance and organization of behavior in the embryonic sea turtle have been studied with special reference to the conditional relations of action development and growth of body shell and in regard to possible connections between initial reactions in fetal life and adjustive motor coordinations occurring after the turtle is hatched.

POPULATION: In order to conduct this study, natural nests on the ocean beach were located and the time of installation defined. Sample eggs were removed from the nests at specified later dates and taken to nearby quarters for observations. Eight nests were used, from which 55 fertilized eggs were removed.

PROCEDURE: The embryonic animals were observed and stimulated in the egg through a small opening made in the eggshell. In early stages of development the membranes supporting the fetus were not disturbed.

RESULTS: The initial response in the embryonic life of the loggerhead turtle is a generalized C-type response which occurs first during the 12th and 14th days of development. The reaction occurs before the body-shell forms, and upon first appearance does not involve limb reactions or other responses of a specific sort. Specific reactions, when they first appear between the 18th and 21st day of development, are interrelated with the C-response. Complex fetal behavior, which with elaboration constitutes adjustive action after hatching, reflects general features of the primary generalized C-response. The complex activities develop between the 26th and 32nd days of life. The young turtles hatch after about fifty days.

CONCLUSIONS: The occurrence of a mass or generalized C-movement as a primary functional pattern of behavior in the sea turtle tends to confirm the physiological significance of the mass pattern as a behavioral matrix for the organization and specialization of specific movements inasmuch as the mass movement appears in this animal as a primary response in development even though the turtle eventually evolves a body shell which prevents the occurrence of mass trunk activity in later maturation. It is believed that our results indicate that in the growing loggerhead the specific local movements as well as adaptive coordinations of response are organized with reference to more primary and generalized patterns of behavior which constitute a matrix for subsequent integration of response.

11:55 A.M. The Performance of Special Permission Students on Comprehensive Examinations in General Education Courses. *Paul L. Dressel, Michigan State College.* (4)

PROBLEM: Special permission students are defined as those permitted to take a comprehensive examination in a course, prior to completion of the allotted three terms of classwork. The problem is that of determining how their performance compares with that of regular students in the major phases of the courses.

POPULATION: The population under study was made up of Michigan State College students taking comprehensive examinations in the several general education courses at the end of the Fall and Winter quarters 1946–47. The total number in each course for the two quarters varied approximately from 500 to 2500.

PROCEDURE: Special permission students were divided into groups based upon the amount of formal preparation, and two samples of 200 students each, representing 1 and 2 terms of preparation, were chosen. Another sample of 200 students representing the full 3 terms of preparation was chosen as a base for comparison. The examinations were broken up on two different plans; first, by classifying the items according to the term in which they were covered formally in the course; second, by classifying the items according to whether they were purely memory, content items or whether they required real thinking on the part of the responding student.

RESULTS: The special permission students were found to do considerably better than the regular students on those items covered in terms taken by both groups, and as well or better than the regular students on those items covered in terms not taken by the special permission students. In general, this holds true whether one considers purely content items or items requiring higher thought processes, but the comparison is slightly more favorable to the special permission students on thought items than on memory, content items.

Special permission students taking the comprehensive examination but not making a passing grade are found to do about as well on material covered in class as three term C students but fail to pass because of inadequate performance on material in advance of their class attendance.

CONCLUSIONS: 1. In general education courses organized on the assumption of wide variation in training and ability of students, there will be found many students, 10–30 per cent, for whom the course is repetitious and less profitable than a more advanced course.

2. Presentation of material in a college classroom is not highly correlated with the presence of that material in the students' mind. Many who were in the classroom have not assimilated the material and many others who were not in the classroom have assimilated the material.

3. There is no evidence in favor of the frequently voiced criticism that special permission students pass comprehensive examinations by making extremely high scores on one segment of the material and very low scores on other segments.

INDIVIDUAL DIFFERENCES IN PERSONALITY

11:10 A.M., Tuesday, September 9

Banquet Room, Hotel Statler

PERCIVAL M. SYMONDS, Chairman

11:10 A.M. Development of Personality Characteristics. *Elaine F. Kinder, Rockland State Hospital.* (5)

PROBLEM: To establish objective measures of personality characteristics of infant chimpanzees and to investigate the constancy of these characteristics.

POPULATION: Fifteen nursery-raised chimpanzees of the Infant Studies Program of the Yerkes Laboratories of Primate Biology. Ages ranged from one year four months to four years three months at the beginning of the study.

PROCEDURE: Five sets of 20-minute observation sessions distributed over 3½ years, using three standard test situations: (A) test animal alone in 5 x 6½ x 6½-foot cage; (B) with "stimulus" animal in small adjacent cage separated by gratings; (C) two animals paired in the large cage. Activities, timed with metronome and stop-watch, recorded under appropriate categories.

RESULTS: This report brings together and extends data previously reported bearing upon the problem of objective definition of personality characteristics. Characteristics appearing at the earliest ages studied have remained relatively constant over the 3½-year period as shown by high statistical re-test reliabilities. The data of the observational records have been analyzed to isolate aspects of the behavior pattern such as: "tempo" (average activity-span) of a test animal when alone and when a second animal is present; *distribution* of activity (proportion of time in social and in non-social i.e. exploratory, stereotyped motor, etc.-behavior); and other features. The results show marked individual differences in patterns of both social and non-social behavior and in the effect of the presence of a second animal. Highly specific and constant social relationships were characteristic for certain pairs of individuals.

CONCLUSIONS: The marked differences in personality characteristics known to exist among adult chimpanzees are here related to similarly marked differences, appearing at an early age and persisting through childhood, in infant chimpanzees raised in a highly uniform environment. The use of standard situations differing in extent of opportunity for social and non-social behavior gives reliable, objective measures of behavior tendencies expressive of personality characteristics of the individual subjects. These findings have important implications for the fields of child development and personality.

11:25 A.M. The Obverse Analysis of Personality. *John W. Stafford, Thomas V. Moore, and En Hsi Hsü, Catholic University of America.* (6)

PROBLEM: To study personality by "obverse" factorial analysis, using personality traits as the "population" and persons as the "variables"; to determine whether so-called normal subjects may be factorially grouped into configurations similar to syndromes found in psychotic subjects.

POPULATION: 128 personality traits were the "popula-

tion" for the factorial analysis; the "variables" were 56 presumably normal college girls. Factorial analysis was performed twice from the 1540 intercorrelations thus obtained.

PROCEDURE: *1st analysis:* Cosine-pi approximations to tetrachoric correlations were found between 56 subjects, in terms of 128 personality traits claimed or denied. Matrix analysed by Thurstone centroid method. *2nd analysis:* 38 non-diagnostic traits were excluded, and the intercorrelations were recalculated and the factorial analysis performed again.

RESULTS: The 1540 intercorrelations in the first analysis were all positive,with mean .53. After analysis and rotation to simple structure, 3 interpretable dimensions were identified: a cycloid or extrovert type (10 girls); a schizoid or introvert type (5 girls); and a suspicious type (2 girls). There was also a super-factor. After elimination of non-diagnostic items, the mean of the 1540 intercorrelations was .31, with 146 of them negative. A second factorial analysis revealed 11 factors, tentatively identified and named as follows, with number of girls in parentheses: adjusted (13), romantic (12), inferiority (7), simple maladjusted (2), extrovert (4), frustration-romantic (7), schizoid (3), prepsychotic paranoid (2), jealous (2), adjusted-introvert (3), and prepsychotic schizophrenic (2)

CONCLUSIONS: The first analysis, with all 128 traits included, shows clearly the homogeneity of the sample, a group of presumably normal college girls. The second analysis, with non-diagnostic traits eliminated, reveals more clearly the differentiations and variations in the personality groupings. There is confirmation here of an earlier finding that prepsychotic types exist in a group of normal persons, just as the same syndromes may exist in both the prepsychotic and the psychotic individual. Personality seems not to consist of discontinuous, mutually exclusive qualitative types, but to be a multi-dimensional continuous structure, differing only in degree among prepsychotic and psychotic individuals. Since the pattern of the groupings differed in the two analyses, it is concluded that in personality studies factor analysis is *relative*, depending not only on the persons tested but also on the traits selected.

11:40 A.M. Some Elements in Teachers' and Pupils' Personalities. *Sister Mary Amatora, St. Francis College.* (7)

PROBLEM: The problem in the above experiment was the investigation of some elements or components in the personalities of children, Grades IV through VIII, and in the personalities of their teachers.

POPULATION: Comparable scales were constructed and administered (first in an experimental try-out) to 1,542 children and to 485 teachers in 140 classes throughout the city and rural schools of Indiana. A grand total of 409,536 ratings were secured for the major investigation (80,344 for the try-out).

PROCEDURE: Scales were administered by the author; ratings were analyzed statistically; comparisons were made by means of the "t" and correlation techniques.

RESULTS: The investigation revealed (1) the early insecurity of the boys, which decreased with ascendance in grade level, (2) the tendency to relative over-self-estimation in the girls, (3) the tendency of girls to rate girls higher than they do boys, (4) no grade trends in ratings of associates by boys or by girls, (5) that four factors account for most of the variance of the twenty-two traits measured, (6) that teachers tend to be relatively conservative in self-estimation, (7) that teachers rate each other higher than they rate their pupils, (8) the lack of understanding on the part of teachers for boys in their classes, and (9) low but positive correlations on the traits measured between pupil and teacher personalities.

11:55 A.M. Preferences for Literary Characters as Indicators of Personality Characteristics. *Naomi Stewart, New York.* (8)

PROBLEM: To investigate the feasibility of constructing a personality test which would utilize preferences for literary characters as indicators of personality characteristics

POPULATION: Major Sample: 400 Alabama high school students. Check Sample: 80 Connecticut high school students.

PROCEDURE: The subjects' preferences for characters in *Gone With the Wind*, *Wuthering Heights*, and *Kings Row* were obtained; also their scores on 27 personality variables. The relationship between each combination of preferences and each variable was determined for the Alabama sample, then checked for the Connecticut sample.

RESULTS: In the Alabama sample, preferences for certain characters were found to be significantly related to such variables as emotionality, aggressiveness, dominance, self-confidence, sense of humor, originality, liberalism, socio-economic status, intelligence, etc. Results for the Connecticut sample failed to support relationships found with respect to preferences on *Gone With the Wind* and *Wuthering Heights*, and indicated different relationships to obtain. With respect to *Kings Row*, however, the Connecticut results supported the relationships found for the Alabama sample. To account for these discrepancies, Chi Squares were obtained between the two schools on each set of preferences. This revealed that on *Gone With the Wind* and *Wuthering Heights*, the two schools differed significantly in their distributions of preferences; on *Kings Row* they were very similar.

CONCLUSIONS: The data indicate that preferences for literary characters are definite indicators of personality characteristics, but the nature of the relationship between a given preference and any given personality variable appears dependent upon cultural patterns of acceptance and rejection prevalent in the group. A choice of a given character "means" the same thing within two different groups, in terms of the personality variables associated with that choice, only when the two groups are alike with respect to their distributions of character preferences. The feasibility of a personality test based on character preferences is, therefore, highly questionable because of the marked shrinkage in validity that must be expected for successive groups, in light of these findings.

12:10 P.M. Black Boy: A Value Analysis. *Ralph K. White, Central Intelligence Group, Washington, D. C.* (8a)

Value-analysis is a form of content analysis, adapted to the needs of clinical psychology and personality study as well as to the analysis of propaganda, etc. It makes possible a reasonably reliable quantitative description of clinical interviews, TAT records, written self-descriptions, sentence completion tests, autobiographies, etc. Its reliability, measured by various techniques, ranges from .50 to .95. The time required by it—three to five hours for the analysis of a 10-page document—is not impracticable for purposes of thorough clinical study or research. The rationale of the method is essentially similar to that of the Rorschach, or Murray's need-and-press system applied to the TAT. It differs from the latter in that it is simpler in certain ways, and at the same time yields several additional kinds of data.

In this paper the nature and use of the method are illustrated by applying it to Richard Wright's autobiography, *Black Boy*. A number of quantitative results are presented, such as: (1) the predominance of Physical Safety, Aggression, and Knowledge in Wright's manifest value system; (2) his high frustration-satisfaction ratio; (3) his very high per cent of disapproval of other persons (89%), including both of his parents; (4) a particular kind of recurrent pattern or "stereotype" in his descriptions of authoritative adults; (5) several quantitative indications of a low degree of identification with Negroes as a group; (6) the similarity of his value system to that of the gang, rather than to that of adults. Quantitative comparisons are made between this autobiography and eight shorter autobiographies of Stanford students. As in the case of the Rorschach or the TAT, such descriptive facts must be seen in relation to each other, and interpreted in the context of the total picture, if valid inferences about basic psychological factors are to be made.

RORSCHACH

Program arranged by the Division of Clinical and Abnormal Psychology

1:40 P.M., Tuesday, September 9

Banquet Room, Hotel Statler

MARGUERITE HERTZ, Chairman

1:40 P.M. Movement Responses in Normals, Schizophrenics and Neurotics on the Levy Movement Cards. *Joseph Zubin, David M. Levy, and Ralph Rust, New York Psychiatric Institute.* (9)

PROBLEM: A preliminary study to determine the type of responses given by normals, neurotics and schizophrenics to the specific directions for seeing people in movement in a semi-structured stationary field.

POPULATION: A group of 30 normals, 51 neurotics and 50 schizophrenics of approximately equal intelligence drawn from army hospital material.

PROCEDURE: The Levy Movement Cards consist primarily of two physical determinants: shading and contours and the subject is given specific directions to see people in movement. Some 17 psychometric scales have been drawn up to evaluate the type and degree of movement perceived and the response to each of the cards (10 in number) is evaluated on each of these scales.

RESULTS: The analysis of the results indicates that the three diagnostic groups differ significantly from each other in the type and degree of movement perceived. The following scales proved to be differential:

Felt Movement Scale (Rorschach); Acceptance of Task Scale; Degree of Movement; Social Interaction; Adient-Abient Scale; Whole-Part Scale, and Gender Scale.

CONCLUSIONS: On the basis of these preliminary results it may be concluded that the capacity for perceiving movement in a stationary visual field seems to discriminate between normal and abnormal individuals. The normals seem to be capable of most movement, the neurotics are less capable in this capacity while the schizophrenics show the least capacity in this direction. These movement cards promise to be useful in detecting capacity for perceiving movement as well as other nuances of the movement perception process.

1:55 P.M. Color in the Rorschach and Kohs Block Designs. *Elmer H. Potter and Seymour B. Sarason, Yale University.* (10)

PROBLEM: To check on the clinical impression that those children whose responses to the five colored Rorschach cards are of poorer form quality than the responses to the

five achromatic cards tend to do poorly, relative to their mental age, on the brightly colored Kohs block designs in contrast to those children whose form level does not drop in the colored cards.

POPULATION: 31 behavior-problem children admitted for study to the psychiatric unit of the Department of Pediatrics, Yale Medical School. Those cases were included where there was an I.Q. of 70 or above and a chronological age between 9–16 years.

PROCEDURE: Those cases where Kohs score was 18 months above Binet MA were put in one group; those 18 months below Binet MA in a second group; and the remainder in a third group. The following items were taken from the Rorschach: number of form-color and color-form responses, and the number of minus responses to the colored and achromatic cards. Evaluation of form level was also done.

RESULTS: The Kohs-below-Binet group differed from the Kohs-above-Binet group in the following respects: (1) although they gave more colored responses some of them were color naming, color description, or minus responses; (2) the majority gave at least one minus response in a colored card while none in the Kohs-above group did so; (3) they gave more "queer combinatory whole" responses, especially in the colored cards; (4) they showed a marked drop in form level in the colored as contrasted to the achromatic cards. The poor performance in the Kohs is shown not to be a function of a generally low level in the performance type of test (Arthur Point Scale).

CONCLUSIONS: Poor performance on the colored Kohs block designs is associated with the inability to respond constructively to the colored Rorschach cards. Two explanations might be offered: (1) the presence of color stimulates emotional reactions which interfere with intellectual functioning; (2) the presence of color makes the visual grasp of figure-ground relationships difficult and results in emotional reactions which make for inefficient intellectual functioning.

2:10 P.M. A Comparison of the Rorschach and Behn Rorschach Tests Based on a Study of Chronic Alcoholic Subjects. *Alan K. Rosenwald, Illinois Neuropsychiatric Institute.* (11)

PROBLEM: To compare the Rorschach and Behn Rorschach tests as applied to a group of chronic alcoholic patients and to evaluate the personality structure of the chronic alcoholic as revealed in these tests.

POPULATION: 30 patients hospitalized for alcoholism.

PROCEDURE: Group I: 10 patients given the Rorschach. Group II: 10 patients matched with Group I on basis of age, education, and frequency of hospital commitment given the Behn Rorschach. Group III: 10 patients given both the Rorschach & Behn Rorschach; 5 the Rorschach first & 5 the Behn Rorschach first. Time interval elapsing between administration of the two series ranged from one day to two months, with median time three weeks. Rorschach records scored according to Beck's system. Scoring of Behn Rorschach on basis of unpublished norms collected by its author.

RESULTS: No significant differences between the Rorschach & Behn Rorschach were found. The differences within groups were in all cases greater than between groups. There was a tendency for more movement and color to be elicited by the Behn Rorschach.

The protocols of the alcoholic subjects are, in the main, characterized by low W with high D, low M, low C sum, high F+%, high A%, and an essentially normal number of P responses.

CONCLUSIONS: The Behn Rorschach and Rorschach show no significant differences in formal scoring factors although trends towards higher M and color sum were obtained on the Behn Rorschach. On the basis of this study, the essential equality of the two series is indicated.

The more prominent features of the personality structure of the alcoholic would seem to indicate low intellectual drive, overemphasis on concrete aspects of the environment, diminished internal drives and emotional relationships, high perceptual accuracy, and stereotyped thinking which is adaptable to intellectual standards.

2:25 P.M. A Comparative Study of the Rorschach, Harrower, and Behn-Eschenberg Inkblot Tests. *Martin Mayman, Winter Veterans Administration Hospital.* (12)

PROBLEM: It often proves necessary, both in clinical practice and research, to administer an alternate form of the Rorschach Inkblot Test. Two tests have been published to fill this need—the Behn Eschenberg and the Harrower—but as yet there has been little systematic exploration of the equivalence of the three tests. The present study was undertaken to determine to what extent the tests do give equivalent results and to discover the constant difference, if any, between test results so that corrections and allowances can be made when a Harrower or Behn protocol is compared with a Rorschach protocol. The study also gives some indication as to which of the alternate tests is superior when used with superior normal adults.

POPULATION: The subjects for the study were a group of 30 applicants to the Menninger Foundation School of Psychiatry. They form a relatively homogeneous group with respect to intelligence, vocational interest, and similarity of conditions under which the test was administered.

PROCEDURE: The three tests were administered individually to each subject. The order of presentation was controlled so as to equalize as much as possible the effect one

test might have upon the succeeding tests. The interval between tests was in no case less than 6 hours nor more than 24.

RESULTS: The paper summarizes the commonality and the differences which were found between the three ink-blot tests. In particular, the study indicated: (1) the constant differences between tests in the frequency of occurrence of the major determinants; (2) the quantitative and qualitative differences in the stimulus-value of the three series of blots (number of responses, per cent of all responses which are popular or near-popular, per cent of responses which are good originals); and (3) differences between each Rorschach card and its corresponding card in the Behn and Harrower series in special proclivities and function.

SYMPOSIUM: BINET TESTING MATERIAL AS A DIAGNOSTIC INSTRUMENT FOR PERSONALITY STUDIES

Sponsored by the Division of School Psychologists

1:40 P.M., Tuesday, September 9

Michigan Room, Hotel Statler

THEMATIC TESTS

Program arranged by the Division of Clinical and Abnormal Psychology

2:50 P.M., Tuesday, September 9

Banquet Room, Hotel Statler

ROBERT HOLT, Chairman

2:50 P.M. An Exploratory Investigation of the Relative Effectiveness of Motion and Still Pictures for Stimulating Fantasies about Intra Family Relationships. *Paul E. Eiserer, University of Chicago.* (13)

PROBLEM: An exploratory investigation of the relative effectiveness of motion and still pictures for stimulating fantasies about intra family relationships.

POPULATION: Fifty (50) boys, ages 14–16 (IQ 93–159), tenth grade, Laboratory Schools, the University of Chicago.

PROCEDURE: Twelve moving picture sequences (12 to 21 seconds in length) depicting a variety of intra-family situations were developed. Single frames judged most comparable to the movie situations were developed on 2 x 2 slides for projection.

Two batteries were constructed, each including a series of moving and still pictures. One group received movie —still stimuli, the other group the still—movie stimuli. All of the tests were individually administered; responses were in the form of stories as in the Thematic Apperception Test. All responses were taken by wire recorder.

RESULTS: Analysis of the data is under way and will be completed by August. This study is a doctoral dissertation at the University of Chicago.

CONCLUSIONS: Quantitative and qualitative analyses of the data (600 stories) are in process to make possible conclusions about the following:

1. Relative effectiveness of motion and still pictures for eliciting fantasies.
2. Patterns of the fantasies of adolescent boys about intra family relationships.
3. Potentialities of moving pictures for use as projective methods.

3:05 P.M. A Preliminary Study of Norms for the Thematic Apperception Test. *Leopold Bellak, New York Medical College, Rudolf Ekstein, Menninger Clinic, and Sydell Braverman.* (14)

PROBLEM: An investigation of productions to ten TAT pictures in reference to (1) the nature and frequency of principal themes and (2) manifestations of Oedipal problems.

POPULATION: 250 college students of C.C.N.Y. (2,500 stories).

PROCEDURE: Ten TAT pictures were shown to college classes by projecting them on a screen. The subjects wrote their responses. Thereafter, each story was typed on a file card with the vital statistics of the subject. The stories were analyzed for their main thema and revelation of Oedipal conflicts. All stories were analyzed independently by each of the three investigators and their results correlated. 25 cases were interviewed extensively for corroboration of TAT findings and their autobiographies studied.

RESULTS: The most frequent themata in responses to each one of ten TAT cards were catalogued and are presented in detail. The variation of Oedipal situations in males appeared most distinctly in responses to 6BM and 7BM, and in females in 7GF, as expected. The particular structure of main Oedipal situations is discussed in detail.

CONCLUSIONS: The TAT seems well suited to reveal basic phantasies indicative of the dynamics of personality. The establishment of the frequency of certain main themas in response to TAT pictures gives a frame of reference for the evaluation of TATs in the future. Similarly, norms for the manifestations of Oedipal situations for the average college student allow a more correct evaluation of future Thematic Apperception Tests. The accumulation of such files must be encouraged.

3:20 P.M. A 3-Dimensional Apperception Test: A New Projective Technique. *Doris Twitchell-Allen, Glendale, Ohio.* (15)

PROBLEM: To develop a set of materials and technique

for obtaining psychomotor expression, in accordance with the thesis that manipulation of objects and dramatization can reveal facets and properties of the person not disclosed by mere verbalization.

POPULATION: 50 clinical cases, children with behavior problems, and normal, neurotic, and psychotic adults, have been used in this exploratory study.

PROCEDURE: A set of 28 ambiguous ceramic pieces, ranging from geometric to organic forms, were constructed to meet the following criteria of acceptable projective material: durability, ease of production in quantity for professional distribution, non-prohibitive cost, adaptability to the usual office set-up, interest, or stimulus potency, for a wide range of ages and types of individuals, ease of manipulation, and ambiguity permitting individual interpretation.

A technique was devised to engage the person in meaningful activity: 1. in free interpretation of the material, 2. in organization of his interpretative material, 3. with adequately prolonged expression to yield ample data for analysis by the examiner.

This 3-Dimensional Apperception Test was administered to different ages and types of individuals to test the efficacy of materials and technique.

RESULTS: The data yielded were significant for personality analysis. Comparison with Rorschach findings in many of the same individuals showed that the 3-Dimensional Forms revealed more concrete material concerning inner goals, interests, conflicts, or anxieties.

CONCLUSIONS: Psychomotor activity in the form of manipulation and dramatization in an individual test situation can yield data which make a unique contribution to analysis of personality. The 3-Dimensional Apperception Test appears to be a useful addition to the projective materials already in use. Results justify extensive experimentation leading to an establishment of norms.

3:35 P.M. A Study of the Thematic Apperception Test as Applied to a Group of Disturbed Children. *Martha Ericson, Merrill-Palmer School.* (16)

PROBLEM: To investigate some of the dynamics of the Thematic Apperception Test as applied to a group of disturbed children.

POPULATION: Thirty children, ranging in age from 6 years, 7 months to 13 years, 2 months. Of this group, 22 were boys, 8 were girls. The range in I.Q. was from 81 to 157, the median being 106 for boys, 100 for girls. All children studied were pupils of the Orthogenic School at the University of Chicago.

PROCEDURE: Each child was given the Murray Thematic Apperception Test, with the full series of twenty being administered in two sessions. The verbal productions of the children were analyzed for several items: differences in initial reaction time, verbal productiveness, evidences of shock, delay in response time and so forth.

RESULTS: Girls are more productive on the verbal level than boys. The series for boys and girls differs considerably. The results for the "neutral" series (used for both boys and girls) show marked similarities in patterns of productiveness, reaction time, etc. Several technical problems are discovered: one, the need for some kind of organization score; two, the need for well-defined criteria for interpretation; and three, some age-norms. The test is shown to be extremely useful, particularly as an adjunct to the Rorschach Test, because the Thematic Apperception Test deals more with the production of themas resulting from the processes of socialization, rather than the basic personality structure as revealed by the Rorschach Test.

CONCLUSIONS: The test itself is an extremely useful diagnostic tool, and can be used to determine the dynamics of personality characteristics in a social situation. The series for boys and girls differs considerably in degree of complexity, in subject matter, and involves different degrees of organization. Girls were found to be more productive than boys. When the neutral series is studied, similar patterns of reaction and productiveness are shown. Some of the pictures do not elicit rich responses; this is particularly true of Card 19. The series should be altered so that there is some possibility of euphoric response, which was markedly lacking in the children studied. A scoring system somewhat like that used in the Rorschach Test could probably be developed.

SYMPOSIUM: MEASUREMENT OF TEACHING ABILITY

Sponsored by the Division of Educational Psychology

3:00 P.M., Tuesday, September 9

Michigan Room, Hotel Statler

Development of criteria for validation of measures of teaching ability; the relationship of controls to behavior; new techniques of teacher evaluation; unmeasured products of teacher leadership; individual differences in teaching ability; techniques for evaluating influences of teachers upon pupils; problems involved in the collection and evaluation of subjective types of data.

A. S. BARR, Chairman

Participants: A. S. BARR, "Problems in Measurement of Teaching Ability"

PERCIVAL M. SYMONDS, "New Measure of Teacher Personality"

HAROLD H. ANDERSON, "Influence of Teacher Personality on Pupil Personality"

RAYMOND B. CATTELL, "Clinical Versus Statistical Measures of Ability"
DAVID RYANS, "Criteria for Validation Measures"

SYMPOSIUM: METHODS FOR PRODUCING AND MEASURING CHANGE IN GROUP FUNCTIONING

Sponsored by the Society for the Psychological Study of Social Issues

3:00 P.M., Tuesday, September 9

Crystal Ballroom, Hotel Book-Cadillac

Part II: Specific Applications

SYMPOSIUM: INTERPROFESSIONAL RELATIONSHIPS

Sponsored by the Division of Consulting Psychology

3:00 P.M., Tuesday, September 9

Italian Garden, Hotel Book-Cadillac

This symposium will consider interprofessional relationships between psychology and pediatrics, psychiatry, and social work. Each of the three fields will be represented by a team consisting of a guest speaker and a psychologist. Emphasis will be placed on aspects of training that assist in developing effective interprofessional relationships.

LAURANCE F. SHAFFER, Chairman

Participants: *For Pediatrics:* JOHN FITCH LANDON, M.D., Attending Pediatrist, Roosevelt and Woman's Hospitals and HELEN THOMPSON, Ph.D., Consulting Child Psychologist

For Psychiatry: DALE CAMERON, M.D., Assistant Chief, Mental Hygiene Division, U. S. Public Health Service and JAMES G. MILLER, M.D., Ph.D., Chief, Clinical Psychology Section, Neuropsychiatry Division, VA

For Social Work: ELIZABETH ROSS, Consultant in Psychiatric Social Work, VA and J. McV. HUNT, Ph.D., Director, Institute of Welfare Research, Community Services Society, New York

MINNESOTA MULTIPHASIC TEST

Program arranged by the Division of Clinical and Abnormal Psychology

4:00 P.M., Tuesday, September 9

Banquet Room, Hotel Statler

JOHN G. DARLEY, Chairman

4:00 P.M. A Study of the Effect of the K Correction on the Differential Diagnostic Efficiency of the Minnesota Multiphasic Personality Inventory. *Howard F. Hunt, William A. Cass, Jr., Abraham Carp, and Clarence L. Winder, Stanford University, and Palo Alto Veterans Hospital.* (17)

PROBLEM: To study the effect of the K correction on the power of the Minnesota Multiphasic Personality Inventory (MMPI) to differentiate between psychotic and non-psychotic psychiatric patients.

POPULATION: All sufficiently cooperative patients admitted to a VA neuropsychiatric hospital during a period of approximately five months were tested routinely with the MMPI. Of these, 114 fulfilled the criteria of producing valid test profiles and of receiving an official diagnosis implying a functional psychiatric disorder; the corrected and the uncorrected MMPI profiles of this group were the basic data of this study.

PROCEDURE: Both sets of profiles were sorted into diagnostic categories in accordance with objective "diagnostic indicators" as defined in the published literature on the test. Utilizing chi-square to test significance, the MMPI "diagnoses" were compared with the independent criterion of official hospital diagnoses as to presence or absence of psychosis. To clarify the implications of the results, the sample was subdivided as seemed appropriate in repetitions of this experimental analysis.

RESULTS: (1) The sorting procedure proved to be reliable. (2) The agreement between hospital and MMPI diagnoses was not significantly greater than chance for either the corrected or the uncorrected profiles. (3) The addition of the K correction did not significantly improve the accuracy of MMPI diagnosis according to the criteria employed. (4) The addition of the K correction did not significantly reduce the frequency of "false negatives" (abnormal persons whose profiles contained no score over 70). (5) Repetition of the experiments on those profiles with scores in the range where K is maximally effective produced similarly negative results (N equal to 40). (6) Repetition of the experiments after removal from the sample of all cases and/or profiles diagnosed "psychopathic personality" produced similar results, indicating that the administrative and clinical ambiguity of this diagnosis was not an appreciable factor in this study (N equal to 61). (7) The general effect of the K correction was to improve the accuracy of MMPI diagnoses by statistically insignificant amounts.

CONCLUSIONS: The addition of the K correction to the MMPI profiles failed to improve significantly the power of the test to differentiate between psychotic and non psychotic psychiatric patients in the sample studied This finding is not attributable to unreliability in the MMPI sorting technique employed and is probably not attributable to the ambiguity of the clinical and/or MMPI diagnosis of "psychopathic personality."

4:15 P.M. Relationships Between Selected Disability and Disease Groups and the Minnesota Multiphasic Personality Inventory. *E. L. Phillips, and D. N. Wiener, University of Minnesota.* (18)

PROBLEM: Can relationships between disability and disease groups and an objective measure of personality be demonstrated? Clinical evidence and subjective estimates point out such relationships, but will they hold up when objective measures are used?

POPULATION: Approximately 400 cases of disabled young men with diagnoses in the following 8 categories: malaria, duodenal ulcer, arthritis, gunshot wounds, asthma, back injuries, heart ailments, and auditory defects.

PROCEDURE: Results of the Minnesota Multiphasic Personality Inventory, age, education, and intelligence were computed for approximately 400 disabled young men; disability groups were compared with each other and with a non-disabled control group from the same population.

RESULTS: Profiles characteristic of each of the 8 disability and disease groups were found. These profiles differ from the profiles of a non-disabled group taken from the same population.

Education, age, and intelligence do not generally differ among the 8 groups. The results are in line with certain clinical observations on the relationship between disease and disability groups and personality.

CONCLUSIONS: 1. The hypothesis that a relationship exists between disease and disability groups and personality has been substantiated by results from an objective measure of personality.

2. These relationships enable us to evaluate what is "normal" behavior for a particular disability or disease group and to apply this information in specific clinical and guidance situations.

3. Although the etiology of these relationships was not investigated these results suggest many topics for study regarding proneness to, and effects of, disease and disability.

4:30 P.M. Behavior of Post-Polio School Children on the California Test of Personality. *Morton A. Seidenfeld, National Foundation for Infantile Paralysis.* (19)

PROBLEM: A study of the effects of the apparency of disability on the responses to a personality inventory of 110 Los Angeles school children, all of whom had infantile paralysis.

POPULATION: A group of 110 Los Angeles boys and girls between the ages of 9 and 15 were studied. All of these children were attending public school in Los Angeles and all had had poliomyelitis. One-half of the total group developed no apparent residual paralysis and one-half were left with a visible disability of varying severity.

PROCEDURE: Each of the subjects was given the California Test of Personality, Elementary Form A. Responses were coded on Findex cards and subjected to item analysis, like-mindedness studies, using the Zubin technique and comparisons of responses as affected by such factors as the presence or absence of visible disability, school retardation, age, sex, etc. as influencing elements.

RESULTS: While the results have not yet been fully recorded, there appear to be a number of interesting patterns of response that are related to deviations resulting directly from illness or indirectly induced by prolonged confinement to bed, altered structual functional relations, alterations in parent-child relations and from the school-child-family relationship. It seems quite apparent that infantile paralysis which is primarily a disease of children, exerts a psychological influence as well as a physical one and that this effect has its origin early enough in the individual's life to justify further exploration. The development of modes of combatting insidious psychological changes can only occur as we become aware of the nature of them.

CONCLUSIONS: 1. A study of the characteristic responses of post-polio children between the ages of 9 and 15 in response to a personality inventory seems to indicate that having polio (and this probably applies to other disabling diseases) does tend to produce reactions and patterns of response that are at variance with those occurring in children who have not been the victims of a chronic illness.

2. There seems to be some indication that being left with residual paralysis may also affect the patterns of response.

4:45 P.M. A New Modified Concept Formation Test. *Ray D. Chard and Bert D. Schwartz, Veterans Hospital, Lyons, New Jersey.* (20)

PROBLEM: A New Modified Concept Formation Test.

PROCEDURE: The Lyons-Holsopple revision of the Holsopple Concept Formation Test reported in 1938 possesses many advantages over other block-sorting techniques. Employing 16 blocks, each varying in eight characteristics, they may be sorted in 28 combinations of fours by holding any two variables constant for a given sort. Thus, the test can be repeated several times with one subject, or until he learns all the 28 possible sorting concepts.

The use of a simulated "automatic" sorting guide apparatus makes the task apparently independent of the examiner's whims. The apparatus consists of a box with four compartments, with a light and a dummy "electric eye" in each compartment. The lights serve as indicators of correct sorting and are operated ostensibly by the electric sorter but are really controlled by the experi-

menter with a concealed switch. A novel scoring system makes possible standardized administration and scoring as well as a complete qualitative protocol.
RESULTS: Resu'ts of using this technique with normals and a few selected psychiatric cases are given.

DIVISION BUSINESS MEETINGS AND PRESIDENTIAL ADDRESSES

Tuesday, September 9

Division of Clinical and Abnormal Psychology
7:00 P.M., Banquet Room, Hotel Statler
Presidential Address: 7 P.M.
LAURANCE F. SHAFFER, "The Problems of Psychotherapy"
Business Meeting: 8:00 P.M.

Division of Industrial and Business Psychology
7:00 P.M., Michigan Room, Hotel Statler
Business Meeting: 7:00 P.M.

Division of Theoretical-Experimental Psychology
7:00 P.M., Bagley Room, Hotel Statler
Business Meeting: 7:00 P.M.

Division of Educational Psychology
7:00 P.M., Ivory Room, Hotel Statler
Business Meeting: 7:00 P.M.
Presidential Address: 8:00 P.M.
W. A. BROWNELL, "Learning Theory and Educational Practice"
HERBERT S. CONRAD, Chairman

Division of Physiological and Comparative Psychology
7:00 P.M., Parlor C, Hotel Statler
Business Meeting: 7:00 P.M.
Presidential Address: 8:00 P.M.
DONALD B. LINDSLEY, "New Concepts of Brain Function and Integration"

Division of Consulting Psychology
7:00 P.M., Parlor F, Hotel Statler
Business Meeting: 7:00 P.M.
Presidential Address: 8:00 P.M.
JACK W. DUNLAP, "Men and Machines"

Division on the Teaching of Psychology
7:00 P.M., Parlor C, Hotel Book-Cadillac
Business Meeting: 7:00 P.M.

Division of General Psychology
7:00 P.M., Founders Room, Hotel Book-Cadillac
Presidential Address: 7:00 P.M.
NORMAN L. MUNN, "The Psychologies of 1947"
Business Meeting: 8:00 P.M.

Division of Esthetics
8:00 P.M., Parlor B, Hotel Statler
Business Meeting: 8:00 P.M.

Division of School Psychologists
8:00 P.M., Parlor D, Hotel Statler
Presidential Address: 8:00 P.M.
HARRY J. BAKER, "Major Problems Facing School Psychologists"
Business Meeting: 9:00 P.M.

Division of Psychologists in Public Service
8:00 P.M., Parlor E, Hotel Statler
Business Meeting: 8:00 P.M.

Division of Counseling and Guidance Psychologists
8:00 P.M., Crystal Ballroom, Hotel Book-Cadillac
Business Meeting: 8:00 P.M.

Division of Personality and Social Psychology
8:00 P.M., Italian Garden, Hotel Book-Cadillac
Business Meeting: 8:00 P.M.
Presidential Address: 9:00 P.M.
DANIEL KATZ, "Scientific Method and Social Psychology"

Division on Evaluation and Measurement
8:00 P.M., English Room, Hotel Book-Cadillac
Business Meeting: 8:00 P.M.
Presidential Address: 9:00 P.M.
L. L. THURSTONE, "Psychological Implications of Factorial Theory"

Division on Childhood and Adolescence
8:00 P.M., Washington Room, Hotel Book-Cadillac
Presidential Address: 8:00 P.M.
JOHN E. ANDERSON, "Personality Organization in Children"
Willard C. Olson, Chairman
Business Meeting: 9:00 P.M.

Division of Military Psychology
8:00 P.M., Reception Room, Hotel Book-Cadillac
Business Meeting: 8:00 P.M.

The Division on Maturity and Old Age will have its Presidential Address Friday, September 12 at 7:00 P.M.

WEDNESDAY, SEPTEMBER 10

SELF-INSIGHT AND THERAPY

Program arranged by the Division of
Clinical and Abnormal Psychology
8:50 A.M., Wednesday, September 10
Banquet Room, Hotel Statler
DAVID M. LEVY, Chairman

8:50 A.M. Sources of Consistency in Some Self-Evaluation and Projection Situations. *Harvey A. Robinson and Joel Shor, Yale University.* (21)

This study is intended to pilot a long range and longitudinal investigation of personality variables in academic success and failure. We are here interested in evaluating a number of techniques which may yield understanding about various patterns of causative factors in academic failure at Yale.

Our subjects are all 75 of the Engineering School undergraduates who were placed on General Warning (academic probation) during the Spring Term, 1947. In general, these men failed to attain an overall scholastic average of 65 at midterm.

First, they were given the opportunity to explain and evaluate their academic status by written response to a "free" questionnaire, followed by a check list, in a group situation. At the same time the students submitted to these test situations: a psychosomatic inventory and a sentence completion test. A standardized life history and vocational perspective questionnaire was also administered.

A thirty-minute semi-standardized interview is being arranged for each student. This will permit a non-directed oral expression of personal attitudes toward his precarious academic situation. In addition this meeting will permit the interviewer to clarify specific attitudes and facts in the life history and questionnaire. Finally a Thematic Apperception Test will be individually administered.

These several data will be scored and rated by each of the writers as to the presence of intrapunitive, impunitive, and extrapunitive thinking (Rosenzweig). We wish to explore the usefulness of this trichotomy of defensive modes of thinking in a concrete, stressful situation. We are first interested in determining the consistency with which each subject utilized any of these modes of thinking in one, several or all of these self-evaluative tasks. So also for the projective situations. Correlation will be sought between the resulting patterns of consistence and a variety of life history data, including Health Records and Freshman Aptitude levels. An additional inquiry in our study will be the relation of the various personality and biographical variables to the student's own prediction of his end-of-the-year academic status, and with his actual achievement. Follow-up interview and further evaluation are planned. An equivalent inquiry has been set up for a similar group of highly successful students in the same undergraduate school.

This study has been made possible through the interests and cooperation of Dean S. W. Dudley of the Yale School of Engineering and Dr. C. C. Fry, Chief Psychiatrist of the Division of Psychiatry and Mental Hygiene, Department of University Health, Yale.

9:05 A.M. The Measurement of Self-Insight and Some of its Personological Correlates. *Robert R. Holt, Winter VA Hospital.* (22)

PROBLEM: Despite the importance for therapy of the concept of self-insight (insight into one's own personality), relatively little work has been done on its measurement. Among the psychological problems that are involved are: whether one should try to measure insight into personality pattern and dynamics, or obtain and validate self-judgments of independent aspects of personality, and the dependence of the final measure on the number and nature of variables used. Measurement seems to be possible only when the atomistic method is used. Problems involved in the choice of a statistic that will best represent the degree of agreement between self-ratings and the criterion are discussed.

POPULATION: Subjects were 10 undergraduates who were intensively studied by many collaborators at the Harvard Psychological Clinic, and rated by its Diagnostic Council.

PROCEDURE: The criterion used was the final ratings on a list of manifest needs. Subjects rated themselves on each of the 36 needs, and the two sets of ratings were correlated by various methods.

RESULTS: The measure found most suitable was the summed squared deviations between self- and criterion-ratings. In the subjects studied, this measure of insight correlated most highly with personological variables which fell into four main groups: (1) aspects of intelligence; (2) variables reflecting constitutional strength; (3) measures of social adjustment and dominance; and (4) effects of insight or concurrent effects of common causes, such as Breadth of Interests. All subjects rated themselves more validly on some needs than on others: *n Rejection* and *n Dominance: Ideas* were self-rated most accurately; *n Retention* and *n Playmirth* showed most disagreement.

CONCLUSIONS: The principal conclusions of the study are:

first, it is important to be aware of the mathematical assumptions involved in statistical measures of insight, and not uncritically adopt the most conventional index; second, insight into overt behavioral characteristics requires a certain amount of intelligence, and apparently develops in people who are constitutionally and socially 'good organisms.''

9:20 A.M. A Case of Sadism Expressed Through Pictorial Mutilations. *Milton B. Jensen and T. Norbert Kende, Louisville, Kentucky.* (23)

A case history will be presented of sadism expressed through pictorial mutilation. The man involved attacked pictures rather than the women whom he knew in actuality.

Patient is from a family of moderate economic status with a history of instability but no psychosis. Of superior intelligence, he scores IQ's of 122 and 114 (total 120) on the Wechsler-Bellevue. On a wide variety of psychological tests his scores are not radically atypical. He completed three and a half years of high school (ages 15–18), worked as a grocery clerk three years, an automobile assembler four years, a salesman six months, operated his own small business five years, and now is a student-apprentice automobile trimmer. His childhood training relative to religion was strict; relative to sex, puritanical.

We dismissed him from our clinic at a time when he refused narco-analysis, which we considered essential. He refused to consider electro-shock therapy, which we thought might be necessary. Later, his sister consulted us, saying that the wife had left and that the husband (patient) was eager for any treatment we might recommend, if we would help him. Since then he has consulted us regularly. He is teachable, conscientious, overly religious, penitent, and eager for help. Under sodium pentothal, we have filled in most of the gaps from his previous account of his sadistic fantasies and their development. We interpret these fantastic mutilations of pictures of women to result from a conscious desire to hurt women for having disappointed him—for not having lived up to his ideas of and ideals for them.

9:35 A.M. The Status of a Case of Hypogonadism Five Years After Treatment Cessation. *Hermon W. Martin, Emory University.* (24)

PROBLEM: What lasting effects may accrue from hormone treatment of primary testicular hypogonadism when maintenance boosting is omitted?

POPULATION: One male case of marked hypogonadism, treated at age 17.

PROCEDURE: In late 1940 a pronounced case of male hypogonadism was treated intensively by physicians at the university hospital with testosterone propionate (Neo-Hombreol, trade name). The writer was invited to follow the possible developmental progress of the boy. Several measures of physical, mental and temperamental status were taken at the beginning, during and at the end of the treatment period.

RESULTS: The results of these measures were summarized on comparative charts and presented at the last meeting of AAAP and APA prior to the war, in 1941 at Northwestern in Evanston. The results appeared to be rather notable. Now, after five to six years without treatment, the case is being reviewed and checked both physically and psychologically.

Some regressions are showing up, but some of the gains and consequent experiences following treatment are still leaving their imprint upon the individual's habits and attitudes.

CONCLUSIONS: With respect to the broader personality development, as well as some physical gains, it appears worthwhile to have treated the case, even though the situation has been such that maintenance doses of the hormone were not continued.

DEVELOPMENT OF INTELLECTUAL FUNCTIONS

8:50 A.M., Wednesday, September 10

Michigan Room, Hotel Statler

FLORENCE GOODENOUGH, Chairman

8:50 A.M. A Follow-up Study of the Mental Development of One Hundred Adopted Children in Iowa. *Marie Skodak, Personnel Counseling Service, Flint, Michigan and Harold M. Skeels, VA, Denver, Colorado.* (25)

PROBLEM: One hundred children placed in adoptive homes had been given periodic intelligence tests during early childhood. The resulting IQs were considerably higher than expected on the basis of socio-economic histories of the natural parents. Mental tests, available for most of the mothers, showed a mean IQ of 86. This study reports results of a follow-up examination of these children in early adolescence.

POPULATION: These 100 children, representative of a larger number reported in various studies, had been placed under 6 months of age and were legally adopted. Ages at last examination ranged from 12 to 18 years.

PROCEDURE: The children were first tested between 1934–1936 as part of routine adoption procedure at the end of a year of probationary residence. Reexaminations were made in 1937 and 1940 using the 1916 Stanford-Binet and in 1946 using both the 1916 and 1937 Revisions.

RESULTS: The first examination at a mean age of two years resulted in a mean IQ of 117; the second examination at a mean age of four years in a mean IQ of 112; the third examination at a mean age of seven years in a mean IQ of 114; while the last examination at a mean age of 13 years resulted in a mean IQ of 107 on the 1916 Stanford and mean IQ of 117 on the 1937 Form L. Correlations between tests decreased as the time interval increased. Correlations between child IQs and foster parent education remained around zero, while correlations between child IQ and true-mother IQ (63 cases) showed an increase from .00 on first test to .44 on fourth test. Other correlations remained low.

CONCLUSIONS: The intellectual level of the children has remained consistently higher than would have been predicted from intellectual, educational or socio-economic level of the true parents and is superior to the mental level of children in environments similar to those in which the natural parents grew up. The mean IQs of the children are the same as or higher than the IQs of own-children in socio-economic levels similar to those of the foster parents. The educational or occupational data available for foster or natural parents are not sufficiently refined in the typical social history record to predict the course of mental development of the children. Other factors, primarily emotional and personal, appear to be more significant. The results of repeated study of 100 adopted children extending into the adolescent years justify a policy of early placement in adoptive homes offering emotional security in above average cultural settings.

9:05 A.M. Explanation of Causes of Natural Phenomena by Children with Normal and Defective Hearing. *Mildred C. Templin, University of Minnesota.* (26)

PROBLEM: To study the effect of hearing loss and of institutionalization upon explanations of the causes of natural phenomena.

POPULATION: 850 subjects from 10 to 20 years in grades five through twelve constitute four groups: 293 residential hearing, 272 day school hearing, 108 day school deaf, and 177 residential deaf. From this sample residential and day school deaf, deaf and hearing residential, and deaf and hearing day school groups are matched on age, grade and intelligence.

PROCEDURE: A group technique was used. The subjects wrote their explanations to 21 of the questions devised by Deutsche such as "What makes the rainbow after the rain?" The Pintner Non-Language Mental Test was given all subjects.

RESULTS: 1. The defective hearing are four to five years retarded in quantitative scores on explanations. The day school are superior to the residential deaf by age, grade, and intelligence.

2. The curve of growth in explanation when the 18-year-old hearing scores are taken as terminal status decelerates at an earlier age for the defective hearing.

3. The deaf use more words to give less adequate explanations.

4. Both deaf and hearing give better or poorer explanations of the same questions (rhos .46–.93).

5. The explanations of the deaf are more highly related to school grade than age or intelligence.

6. Using Piaget's classification, the defective hearing use more phenomonistic and fewer logical explanations than hearing children of the same age, grade, and intelligence.

7. When matched groups are compared: a) The day school deaf score significantly higher than the residential deaf; with hearing loss controlled the differences are not significant. b) The residential hearing score significantly higher than the residential deaf. c) There are no significant differences in the scores of the day school deaf and day school hearing.

CONCLUSIONS: In the explanation of natural phenomena the deaf are immature in the level of explanation and in the type of explanation offered. The explanations of the deaf are related to the degree of hearing loss and grade achievement more than to enrollment in a residential or a day school. Although the deaf give less adequate explanations, the same questions are hard or easy for both groups.

9:20 A.M. "Spontaneous" Responses as Rehearsal: A Note on "Overt Thinking" in Animals. *Harold Coppock, and O. H. Mowrer, Harvard University.* (27)

PROBLEM: The inter-trial responses (IRs) of animals during "conditioning"—far from being "purposeless" or "neurotic"—may facilitate learning, much as the rehearsals of human subjects facilitate memorization.

POPULATION: Sixteen five-month-old rats which were fairly uniform with respect to weight and with respect to activity in an activity wheel, were selected, and randomly assigned to two equal groups.

PROCEDURE: All animals were given 100 trials of avoidance conditioning. The UCS was shock; the CS, a light. The response was contacting a metal bar. The IRs of the experimental animals were automatically recorded, but the bar was taken away from the control animals during the intervals.

RESULTS: The experimental animals learned, between the first ten and the last ten trials, to make significantly more CRs than the control animals, the level of confidence being .01 when calculated either by the chi-square test or by the "t" test. The same significance attaches to the superiority of the experimental animals with respect to CRs on the last forty trials.

Further analysis of the results indicates that those of the experimental animals which made the most CRs on the last forty trials tended to be the ones which made the most IRs, the rank-order coefficient of correlation being .85.

CONCLUSIONS: It is concluded that IRs are associated with better performance of CRs, and that it is therefore possible that IRs facilitate scores on these tests of "recall." But how could a subject learn a response to a CS, in the absence of the CS and in the absence of any apparent reward? We suggest that the CRs and the IRs were not responses to any CS, but to a drive: the conditioned fear reaction. The IRs could increase the habit-strength of the bar-touching response to the drive of fear, since the feel of the bar would become a secondary reward. By implication, the rehearsing of human subjects would also involve secondary reward.

9:35 A.M. On the Utility of Parrots and Other Birds in the Study of Language Development—A Preliminary Report. *O. H. Mowrer, Harvard University.* (28)

There is now a relatively enormous amount of information concerning non-verbal (animal) learning, and there is another impressive body of material dealing with verbal (human) learning; but these two areas are not as yet well coordinated. Systematic and intensive study of the language-learning process promises to provide one important connecting link.

Of all infra-human organisms which are available for laboratory experimentation, only birds provide species in which there is an opportunity to study anything comparable to language-learning in human beings; to date this opportunity has not been exploited. The present report is preliminary to a program of experimentation on the acquisition and functional significance of human words and sentences as uttered by parrots, Mynah birds, parakeets, magpies, etc. It is possible that such experimentation may throw useful light upon the learning, and non-learning, of language and language-skills in human beings.

Two preliminary findings suggest that this kind of study may have human relevance. These are: (1) Birds learn to speak most readily—and some birds *only*—if their training is begun when they are young; and the same seems to be true of human beings. (2) Birds learn to speak only if they are made docile and dependent upon human beings; it is, in fact, apparently

not too much to say that they must "identify" with human beings, rather than with their own kind, if this learning is to occur.

Systematic experiments are planned which will explore the extent to which speech-learning in birds represents (a) conditioning, (b) problem-solving, (c) an "instinct of imitation," or (d) some other mechanism.

The author acknowledges the assistance of Miss Allyn Johnson in this research.

RESEARCH AND APPLICATIONS IN SPECIAL FIELDS

Program arranged by the Society for the Psychological Study of Social Issues

10:00 A.M., Wednesday, September 10

Michigan Room, Hotel Statler

ERNEST R. HILGARD, Chairman

10:00 A.M. Propaganda Techniques of Religious Groups. *Alfred McClung Lee, Wayne University.* (29)

As in the secular press, major strategies in the religious press revolve about sets of persisting issues. The Protestant press has concerned itself with missions, prohibition, and deviant political and economic views. The Roman Catholic press has dealt heavily with doctrinal pronouncements, missions, and deviant political and economic views; its old attention to anti-Catholicism has largely disappeared. The Jewish press divides a large share of its attention between anti-semitism and Zionism.

The paper analyzes the propaganda techniques and strategies typically used in periodicals of various faiths, with especial attention to the use of major issues as omnibuses for a range of minor projects, the terms in which morale is built and maintained, and the ways in which competing or conflicting institutions, movements, and propagandas are depersonalized and otherwise rendered ineffectual among the faithful.

The study is based upon a sample of policy journals of leading religious organizations and upon available summaries and background materials.

10:15 A.M. The Necessity of Considering Current Issues as Part and Parcel of Persistent Major Problems. *Muzafer Sherif, Saugatuck, Connecticut* (30)

Only by considering current social problems of momentous import to human relationships as part and parcel of certain comprehensive areas of investigation can social psychology hope to achieve an accumulating body of knowledge and conclusions which will exert a compelling influence in human relationships. Otherwise, piece-meal efforts are doomed to share the fate of so many previous seasonal undertakings of men of good will of their times. Concrete substance will be given to this generalization by taking a current problem (such as the impact of atomic energy or the problem of prejudice) from several possible ones.

10:30 A.M. A Psychological Handbook for Diplomats Proposal and Plan. *Clara Chassell Cooper, Wilson College.* (31)

In the deranged society of our day, one of the most important functions of psychologists is doubtless that of making readily available in concrete form to specialized groups and professions the generally accepted and pertinent facts applicable to the area concerned. These facts include pertinent psychological principles and the empirical data supporting these principles, together with an analysis of their application to the solution of concrete problems in that particular area.

One of the most important areas at the present time is that of international relations, calling for highly specialized knowledge on the part of diplomats and statesmen. Important beginnings in this field have already been made, including the Psychologists' Manifesto, and, in much greater elaboration, the Society's *Human Nature and Enduring Peace* and several numbers of the *Journal of Social Issues.* Notwithstanding, a statesman confronted with a specific problem, as, for example, the democratization of Germany or the demilitarization of Japan, does not have readily available specific compilations of principles and data with practical applications in the international field.

The proposal of this paper is, therefore, that a brief but detailed *Psychological Handbook for Diplomats* be prepared as a cooperative enterprise of this Society. As a tentative plan, it is suggested that pertinent material be assembled in parallel columns under the following headings:

Psychological Principles	Empirical Data (including experimental and statistical studies and historical incidents)	Application to Solution of Concrete Problems

Evidently much valuable empirical data already exist. As illustrations, studies by H. H. Anderson, Barker, Dembo, and Lewin, Dollard, Doob, and others, French, Lippitt, Marshall, Mowrer, Reed, Thorndike and Woodyard, G. Watson, Wolfle and Wolfle, Wrightstone, and Zimmerman might be cited, as well as the compilation by Murphy, Murphy, and Newcomb, with pertinent material applicable to many problems.

10:45 A.M. Analysis of a Popular Novel. (Case Study of a Collective Day-dream). *Frederick Wyatt, McLean Hospital.* (32)

What is the gratification derived from reading entertainment fiction? A typical example of a successful novel, *Frenchmans Creek*, by Daphne du Maurier, will be analyzed (1) as to its content; and (2) as to the reaction of a selected group of readers to it. The emphasis will be on (1) the analysis of content. In plot and action this book represents a sequence of characteristic feminine day dreams. The over-all attraction of the novel seems to rest in the fact that during the course of numerous adventures it manages to be focussed continuously on the heroine, the figure of identification. Thus it becomes a book specifically for female readers. The function of the stylistic and descriptive qualities of the novel in their bearing upon the condition in which the reader experiences it passively as a realization of her phantasies; and the effect of the historical setting, and of stereotypes in the description of characters will be discussed as well as the importance of the reader's knowledge that her indulgence in phantasy is shared by many others simultaneously. (Hanns Sachs' collective day dreams).

(2) Ten women and five men between 20 and 30, known to the investigator through therapeutic contacts or personality studies, were asked to read the book. They were interviewed then as to their reaction to the book. The results of these interviews were analyzed with regard to the relationship of responses to the book and known personality traits of the readers.

Analysis of this novel provides a case study of the effect and social patterning of entertainment fiction.

EVALUATION AND MEASUREMENT I

Program arranged by the Division on Evaluation and Measurement

10:00 A.M., Wednesday, September 10

Bagley Room, Hotel Statler

J. P. GUILFORD, Chairman

10:00 A.M. The Status of Psychological Testing in Japan. *Chester W. Harris and Lee J. Cronbach, University of Chicago.* (33)

PROBLEM: To determine what testing methods are now familiar to Japanese psychologists and to identify any Japanese ideas of possible value for this country.

PROCEDURE: Each of the authors has visited Japan since the end of hostilities with that country (one in 1945 and one in 1947), and has made an effort to interview available Japanese psychologists and to inspect Japanese testing materials. Twenty Japanese group intelligence tests have been studied intensively.

RESULTS: In general, the Japanese have added little to the American methods of psychological testing in use shortly after World War I. Many familiar American tests have been adapted with minor changes. The difficulty of the Japanese language has forced them to rely heavily on non-verbal, or Beta-type, tests of intelligence. These tests often include items which Americans identify as measuring motor speed, dexterity, clerical accuracy, or arithmetic skill. Simple psychophysical and performance tests have been used extensively for vocational guidance. Psychomotor tests generally measure simple functions such as speed and simple coordination. Personality testing has been limited primarily to questionnaires and ratings. A few workers have applied Rorschach to normal groups.

CONCLUSIONS: Among the possibly valuable Japanese devices are several spatial reasoning items which can be made fairly difficult, an attempt to measure imaginative ability by the sentence-building technique, and scales for judging products based on the paired-comparison technique. The Kräpelin Calculations test, which has been used to identify abnormal types, may be a valuable clinical tool.

With greater attention to problems of validity, Japanese psychological testing can make a major contribution to problems now confronting Japanese education and industry.

10:15 A.M. The Evaluation of Instruction in the Air University. *James E. Creene, Warren C. Findley, Fred Couey, and Thomas F. Staton, Air University, Maxwell Field, Alabama.* (34)

PROBLEM: An appraisal of a comprehensive program of evaluation of instruction in the AAF's Air University System.

POPULATION: The student and faculty populations for the five constituent schools of the AAF's Air University System for the academic year 1946–47 are as follows: 2400 students, 300 instructors.

PROCEDURE: Formal course training in the evaluation of instruction was provided instructors. On request, the instructional staffs were furnished technical assistance in planning, constructing, editing, using, analyzing, revising, and implementing the findings resulting from tests, problems, rating scales, and other evaluative instruments.

RESULTS: Utilization of advisory and technical assistance in planning, constructing, editing, and analyzing tests and other evaluative instruments resulted in the marked improvement and increased use of such instruments as evidenced by: (a) increased validity coefficients (modified Toops formula) for test items on successive tests (e.g., Military Management increases from .15 to .33); (b) improved content of items by increased proportion of functional items requiring judgment and application of principles; (c) increased use of tests based on problem situations; (d) increased requests from instructors for

assistance in designing instruments for measuring, by students as well as faculty, student behaviors in unique instructional situations (e.g., seminars, simulated command and staff work, etc.); (e) almost universal use of student appraisals of instruction.

CONCLUSIONS: 1. Inexperienced and professionally untrained instructors for graduate courses in the Army Air Forces educational program, when properly approached and provided on a voluntary basis with advisory and technical assistance, showed remarkable interest and skill in improving their proficiency in the evaluation of instruction.

2. The Air University's program for the evaluation of instruction, including professional advisory and technical services, would appear to have a number of implications for civilian institutions of higher learning.

10:30 A.M. Relative Contributions of Combined Input Performances to Output Error. *Robert M. Cottsdanker, Tufts College.* (35)

In studying performance in systems where output depends on several different operations, it is often desirable to find the relative contributions of the various input errors to final output error. Such information is used for the following purposes: (1) improving equipment, (2) devising methods of operation, (3) establishing criteria in terms of input error, (4) formulating training programs.

Two interpretations may be made of the term "relative contributions." The first is the extent of determination of output error variance by each of the input error variances. The second is the amount of output error ascribable to each of the input errors. Situations should be examined carefully in deciding which of these meanings is relevant and in choosing the techniques of analysis. The different approaches which may be made will not necessarily yield comparable results.

One basic method of analysis involves correlating measures of input error with a measure of output error. In a continuous task, this may be accomplished in one of two ways: (1) correlating scores which represent values averaged over an interval, (2) correlating instantaneous amounts of error. These techniques relate to quite different aspects of variance determination.

The second basic technique involves providing the system with errorless input in one or more operations. By eliminating error from all but one operation, the limit of accuracy imposed on the system by this operation may be discovered. By comparing output error obtained under usual conditions with that obtained when one operation is made errorless, the amount of error introduced by that operation may be determined. Error inherent in the system may be evaluated by finding output error when all input operations are made errorless.

10:45 A.M. Dependence of Factorial Composition of Aptitude Tests upon Population Differences among Pilot Trainees. *Frank J. Dudek, Clarkson, Nebraska.* (36)

PROBLEM: To determine whether similar factors would be found in a battery of aptitude tests administered to samples representing different selective conditions and to determine the factorial composition of a criterion measure.

POPULATION: (1) Experimental group—1012 unselected male pilot trainees. (2) Women's Auxiliary Service Pilots (WASPs)—198 women in pilot training. (3) Restricted group—1920 male trainees selected by the *AAF Qualifying Examination.*

For each group intercorrelations of the 18 tests (and the pilot criterion) of the AAF November 1943 Classification Battery were factored by the centroid method. Interpretation was made after rotation to simple structure.

RESULTS: Verbal, number, perceptual speed, and psychomotor coordination factors were found for all groups. An aviation interest factor was found for the WASP and Experimental groups. Mechanical experience and space factors were found for the Experimental and Restricted groups. Less well identified were: a visualisation factor for the Experimental group, and mathematics background and kinaesthetic factors for the Restricted group. Inspection of the factorial composition of the tests showed almost all were relatively complex. The communality of the pilot criterion was similar for the WASP and Experimental groups, but every factor accounted for some portion of its variance in the Experimental group, while in the WASP group only three factors (perceptual speed, aviation interest, and verbal) accounted for the common factor variance of the criterion.

CONCLUSIONS: (1) Similar primary factors will be isolated from analyses of test batteries administered to groups representing different selective conditions.

(2) While tests remain relatively similar in their factorial composition from sample to sample they vary in the consistency with which they measure these factors from group to group.

(3) A criterion measure may vary considerably in its factorial composition when this is determined on groups representing different selective conditions

SCHIZOPHRENIA

Program arranged by the Division of

Clinical and Abnormal Psychology

10:00 A.M., Wednesday, September 10

Banquet Room, Hotel Statler

S. J. BECK, *Chairman*

10:00 A.M. Three Types of Thinking Disorder: An Investigation of the Behavior on Special Tests of Schizophrenics, General Paretics, and Cerebral Arteriosclerotics. *Harold A. Rashkis, Psychiatric Institute, Columbia University.* (37)

PROBLEM: To determine if qualitative differences in the behavior of mental patients in three diagnostic categories (schizophrenia, general paresis, and cerebral arteriosclerosis) are demonstrable by means of *sorting tests* which use *verbal* and *arithmetic* materials as manipulative objects.

POPULATION: 10 schizophrenics, 10 general paretics, 10 cerebral arteriosclerotics, equated for educational achievement, carefully selected out of a mental hospital population of approximately 6000.

PROCEDURE: Each patient was administered a Number Sorting Test, which consisted of certain fixed numbers with which certain movable numbers were to be grouped in such a way as to form both horizontal and vertical additions; and a Word Sorting Test, which consisted of certain fixed words with which certain movable words were to be grouped.

Obtained responses were classified both in terms of performance and of explanation of performance.

RESULTS: 1. The schizophrenics showed a statistically significant tendency to perform in an operationally defined "coordinated" manner, and to account for their behavior.

2. The general paretics and cerebral arteriosclerotics tended to perform in an operationally defined "uncoordinated" manner. While the general paretics were unable to account for their performance, the cerebral arteriosclerotics tended to excuse or apologize for the manner in which they had performed.

3. The schizophrenics and cerebral arteriosclerotics were alike in that they both displayed a critical evaluation of their performance, while no evaluation of any sort was attempted by the general paretic.

CONCLUSIONS: 1. The thinking disorder of the general paretic is interpreted as both a deficit in *performance potentialities* and in *organization*.

2. The thinking disorder of the cerebral arteriosclerotic is interpreted as a deficit in *performance potentialities*; the factor of intellectual *organization* is essentially unimpaired.

3. The schizophrenic shows no deficit in *performance potentialities*; his disorder is interpreted as one of *organization*, which appears as a *non-correspondence* between performance and explanation of performance.

10:15 A.M. The Use of Psychological Tests on Schizophrenic Patients Before and After Shock Treatment. *S. S. Dubin, University of Colorado School of Medicine, and M. Thaler.* (38)

PROBLEM: To determine the changes in intellectual and personality functioning before and after shock treatment as measured by the Rorschach and the Bellevue-Weschler Intelligence tests.

POPULATION: The population consists of 12 patients diagnosed as schizophrenia. The patients were included in the study if they had no previous psychotic break and that the symptoms were less than one year's duration.

The control group parallels the experimental group in age, occupation, sex and diagnosis.

PROCEDURE: The Rorschach and the Bellevue-Weschler were administered before shock treatment began. The same tests were repeated after the insulin and electric shock treatments. Psychotherapy was administered to each of the patients during the treatment period by the psychiatrist.

RESULTS: The results of the Bellevue-Weschler show an increase of 17 points in I.Q. The largest range of increase in one patient was 39 points, the smallest, 9 points. T-test scores show that 8 of the Weschler subtests to be significant on the 1% level and 2 on the 5% level. The data on the Rorschach for the experimental group and data for the control group is not yet ready. A follow-up study is in progress.

CONCLUSIONS: A definite increase in I.Q. is obtained by the use of shock therapy. The data on the Weschler indicate that 8 out of the 10 sub-tests are significant on the 1% level and 2 on the 5% level as measured by the t-test. The Rorschach data and the data for the control group are not yet ready.

10:30 A.M. Diagnostic and Prognostic Significance of Prodromal Factors in Schizophrenic Psychoses. *Phyllis Wittman, Elgin State Hospital.* (39)

PROBLEM: Comparative study of a group of young adult patients, diagnosed as schizophrenic who showed maladjustment warranting referral for clinical study as children of school age with a similar group who as children had not shown maladjustment to this degree.

POPULATION: Experimental group composed of 66 schizophrenic patients from Chicago under 25 years of age who had been referred as children of school age to either the Child Study Bureau, Chicago Board of Education, or to the Institute of Juvenile Research.

Control group composed of 66 schizophrenic patients from Chicago under 25 years of age who had *not* been referred as children of school age to either the Child Study Bureau or to the Institute of Juvenile Research.
PROCEDURE: Use of a battery of psychological scales including tests of intelligence, present mental efficiency levels, personality and temperament factors, developmental history and prognostic scale ratings. Compilation of additional statistical data including education, occupation, pre-psychotic adjustment levels, somatotype and temperament type evaluations, type of schizophrenia, type of onset, duration of psychosis, symptomatology and behavior classification results of therapy and present status.
RESULTS: Comparative study of the two groups with the data outlined under Procedure to determine significance of these factors in differentiating the so-called, "process," "constitutional" or "true" schizophrenic from the so-called schizophreniforme, functional or oneirophrenic type.

A significantly larger number of cases in the experimental group show a high positive score on the Elgin Prognostic Rating Scale, a high weighting in heboid regressive features in the psychotic behavior reactions, a lack of improvement on shock therapy and poor institutional adjustment in present status level when compared with the control group.
CONCLUSIONS: Significant differences between the two groups on a number of the factors evaluated emphasize the need for a longitudinal case study of the individual patient for accurate evaluation of both diagnosis and prognosis.

10:45 A.M. Effects of Electric Shock Treatment upon Some Aspects of Personality and Intellect. *Albert I. Rabin, Concord, New Hampshire.* (40)
PROBLEM: To determine the effects of electric shock treatment on the memory, intelligence level, and personality of clinically improved and not improved psychiatric patients.
POPULATION: Ten psychotic State Hospital patients (8 schizophrenics, 1 case each of involutional and mental deficient with psychosis) between the ages of 20–40.
PROCEDURE: The patients were examined by means of the Wechsler-Bellevue intelligence and memory scales, Rorschach and Szondi, before and immediately after the completion of a course of EST treatments. The average period between examinations was about one month.
RESULTS: The group as a whole shows no significant changes in I.Q. or M.Q. The direction of change in I.Q. and M.Q. tends to be consistent in individual cases, but is apparently unrelated to "clinical improvement." The Rorschach shows greater productivity (R), the tendency for F+% to gravitate toward the average range, and an increase in the number of shading responses. There is also a reduction in the number of rejections and a marked improvement in speed of response. No single factors, but the total pattern corresponds with improvement. Szondi findings show a consistent trend of intensification with, and rejection of, the pictures.
CONCLUSIONS: Immediate memory, learning and I.Q. as measured by our instruments remain unaffected by electric shock and are poor indices of improvement. There is a general "loosening" or dilatation of personality as evidenced by a reduction of constriction and greater freedom and speed of associations. Single Rorschach factors cannot serve as indices or as predictors of improvement.

The acquisition of greater insight and autocriticism are supported by the Rorschach and Szondi findings

REPORT OF THE AMERICAN BOARD OF EXAMINERS IN PROFESSIONAL PSYCHOLOGY

Sponsored by the Division of General Psychology

10:00 A.M., Wednesday, September 10

Crystal Ballroom, Hotel Book-Cadillac

WAYNE DENNIS, Chairman

Members of ABEPP: MARION BILLS; JOHN G. DARLEY; CARLYLE JACOBSEN, *Chairman;* JOHN G. JENKINS; GEORGE A. KELLY; DAVID SHAKOW; CARROLL SHARTLE; DAVID WECHSLER; and F. L. WELLS.

SYMPOSIUM: RELATIONSHIP BETWEEN RESEARCH AND SERVICE FUNCTIONS OF THE SCHOOL PSYCHOLOGISTS

Sponsored by the Division of School Psychologists

10:00 A.M., Wednesday, September 10

Italian Garden, Hotel Book-Cadillac

HARRY J. BAKER, Chairman

PERSONALITY DYNAMICS

11:10 A.M., Wednesday, September 10

Banquet Room, Hotel Statler

JAMES G. MILLER, Chairman

11:10 A.M. Personality Factors in the Temporal Development of Perceptual Organization—A Methodological Note. *Eugenia Hanfmann, Cambridge, Massachusetts, Morris I. Stein, and Jerome S. Bruner, Harvard University.* (41)
PROBLEM: Perception requires time. During the period between the presentation of the visual stimulus and

the experience of perception, both sensori-neural and adaptive personality processes are at work. They combine in perception making of it something more than mere sensation or mere autism. The study of the temporal course of perception as it develops with increasing exposure of the organism to the stimulus field is the objective of the present research.

POPULATION: Thirty-seven normal adults.

PROCEDURE: Tachistoscopic presentation of visual stimuli, Rorschach cards, was employed. The cards were presented at .01, .10, and 3.0 seconds in a modified Dodge tachistoscope. In addition each subject was given unlimited exposure of the cards following the briefer exposures. Responses were recorded graphically by the subject and scored in conventional Rorschach categories. Independent clinical data were also available for some subjects.

RESULTS: Qualitative analysis of records thus obtained points to the presence of the following general trends: 1—Very brief tachistoscopic presentation of Rorschach cards yields "primitive" responses which frequently reflect the dominant personality factors operative in the individual personality. 2—A study of the development of responses to the Rorschach with increasing exposure time results in some insight into the ontogenetic development of the individual's personality. 3—Increasing exposure time seems to have the effect, in some cases, of increasing the conventionalizing of defensive perceptual responses of the subject.

CONCLUSIONS: Results obtained by brief exposure of Rorschach cards seem to throw added light both on the nature of Rorschach responses and on processes involved in perception. Defense against "primitive" perceptual responses has been found to require time. To those personality dynamics influencing perceptual selection and accentuation should be added certain ego-defensive processes. Utilization of rapid exposure of Rorschach cards suggests itself, therefore, as a clinically effective adjunct to the regular Rorschach procedure.

11:25 A.M. A Laboratory Investigation of Measures of Frustration Tolerance of Pre-Adolescent Children: A Preliminary Report. *J. Warren Thiesen and Ralph K. Meister, Mooseheart Laboratory.* (42)

PROBLEM: Development of a method of determining individual differences in frustration-tolerance and analysis of the relationship between physiological and overt behavioral reactions to an objectively uniform frustrating situation.

POPULATION: Random sample of 11 to 13 year age group from a private institution for normal, dependent children (Mooseheart, Ill.). Data on 10 subjects have been intensively analyzed. Nine physiological measures, a multiple rating scale and a questionnaire on motivation constitute the data from each subject.

PROCEDURE: Subjects were presented with a series of two stylus-mazes to trace blindfolded after instruments for recording pulse, blood pressure, respiration, GSR, hand tremors and EEG were attached. Tasks were described as tests of learning capacity. The first maze was designed to yield an experience of success and the second maze to yield a strong experience of failure. It was arranged that all subjects solve the control maze in uniformly short time by the use of path blocks, unknown to the subject, to prevent retracing. They spent 10 minutes in unsuccessful effort on the second maze where the true path was blocked. After a rest period, success was permitted. Standard comments during the control task consisted of praise and encouragement, while during the frustration task, these were essentially critical. One experimenter administered the mazes, made the comments and recorded the subject's remarks and behavior. The other handled the physiological recording apparatus. After the experiment, special measures of reassurance were employed and introspections regarding motivation were elicited. Both experimenters rated each subject's behavioral reactions on the basis of 12 variables (3 point scales) from an adaptation of Zander's rating scale for reactions to frustration.

RESULTS: Numerical totals derived from combined behavior ratings provided indices of degree of maladjustment to a standard frustrating situation. The 10 subject represented cases of slight, moderate and severe frustration. The most sensitive of the 9 physiological measures employed correlated significantly with the behavior ratings: pulse rate, $.83 \pm .06$; GSR, $.69 \pm .11$.

CONCLUSIONS: An adaptation of Zander's behavior ratings for reactions to frustration shows strong possibilities of usefulness as an index of frustration-tolerance when employed in connection with a standard, objectively uniform frustrating situation. Such a measure may have clinical significance if interpreted in the light of the motivational aspects of the situation.

11:40 A.M. Personal Values as Determinants of Perceptual Selection. *Jerome S. Bruner, Leo Postman, and Elliott McGinnies, Harvard University.* (43)

PROBLEM: Perception is a selective process. Only a fraction of the continual flux of sensory stimuli is represented in perceptual experience. Sensori-neural processes alone do not determine what is selected. This study is concerned with the role of personal values in perceptual selection.

POPULATION: The subjects were 25 adults, men and women, all of whom were in ignorance of the purpose of the experiment.

PROCEDURE: The procedure comprised two parts: (1) determination of the subject's value orientation by means of the Allport-Vernon Study of Values, and (2) tachistoscopic presentation of a series of 36 words symbolizing (by agreement of judges) the six values of the test. The exposure time needed for the recognition of each word was measured by the methods of limits.

RESULTS: Threshold exposure time for the recognition of value words is a function of the subject's attitude toward the value which the word symbolizes. The null hypothesis that threshold of recognition and value orientation are independent was rejected at the one-per cent level on the basis of a contingency test. In general, the higher a subject's value score the lower his threshold of recognition for a word symbolizing that value. This generalization is supported by a comparison of threshold exposure times for high and low ranking values. Words embodying a subject's highest ranking value are on the average recognized with an exposure .02 sec. below that needed for words symbolizing his lowest ranking value. This difference is significant at the 2-per cent confidence level. Analysis of individual records shows that the great majority of subjects conform to the general pattern. In a few cases a significant reversal of the relationship emerges: the higher the value, the higher the threshold for words symbolizing it. An interpretation of these reversals in terms of perceptual defense mechanisms suggests itself.

CONCLUSIONS: Value orientation is a determinant of perceptual selection. These findings exemplify *one* way in which such factors as needs, attitudes, and habits influence perceptual organization. Our results are consistent with a theory which postulates three ways in which social and personality factors affect perceptual organization. Needs, attitudes, and habits operate in (1) perceptual selection, (2) perceptual accentuation, i.e. vivification of relevant perceptual experience, and (3) perceptual fixation which renders selection and accentuation stable and consistent. This experiment is one of a series of researches on the adaptive processes in perception described above.

11:55 A.M. The Effect of Electric Shock Treatment on Depressive Patients. *Susan K. Deri, City College of New York, Graduate School.* (44)

PROBLEM: To study depressive patients' reactions to a battery of psychological tests before and after electric shock treatment. Experimental design was based on the "hunch" that artificial seizures serve to release the patient's repressed aggression.

POPULATION: Three groups of subjects have been used: (1) Experimental group of 19 hospital patients with depressive symptoms, (2) Control groups: a) 10 hospital patients with similar symptoms to the first group who did not undergo shock treatment, b) 10 hospital employees.

PROCEDURE: The following battery of tests had been administered twice to each subject, the exp. group having undergone shock treatment in the meantime: (1) "Tower building", (2) Satiation experiment, (3) Decision time, (4) T.A.T. (5) Szondi test.

RESULTS: The experimental group showed significant changes from the first to the second testing on all the scores obtained. The changes pointed toward better motor efficiency, decrease in satiation time and decision time, better structurization of the person and strengthening of the repressing forces after shock treatment. No such changes occured in the two control groups. With the exception of the Szondi test the scores of the exp. group after shock treatment approached the score values of the normal control group.

CONCLUSIONS: The results showed that patients after shock treatment regained their organizational power becoming motorically less inhibited and more goal-directed.

The results of the Szondi test partially confirmed the original hypothesis, giving evidence of less inhibition of aggression after shock treatment. However, the same test gave indications that this apparently less inhibited behavior was accompanied by the strengthening of represive mechanism within the Ego. Finally a psychoanalytic theory explaining all these changes is presented and suggestions are made for further research in this field.

EVALUATION AND MEASUREMENT II

Program arranged by the Division on Evaluation and Measurement

11:10 A.M., Wednesday, September 10

Bagley Room, Hotel Statler

HAROLD GULLIKSEN, Chairman

11:10 A.M. The Verbal Relations Factor and Vocabulary. *Elward E. Cureton, Personnel Research Section, ACO.* (45)

PROBLEM: Do tests such as paragraph reading, verbal analogies, proverb matching, scrambled sentences and verbal reasoning generate a factor not found in vocabulary tests?

POPULATION: (1) Five verbal tests were administered to 841 senior students in two New York City high schools. (2) Sixteen tests, including four definitely verbal tests, were administered to 511 clerical workers at an Army installation.

RESULTS: (1) A Spearman-type factor analysis shows that all of the non-specific variance in two vocabulary

tests, a paragraph reading test, a verbal analogies test and a proverb matching test is accounted for by one general factor. There is also an overlapping specific factor in the two vocabulary tests, whose correlation corrected for attenuation is .98. This study contains some interesting methodological points.

(2) A Thurstone-type factor analysis shows that the same two vocabulary tests used in the previous study have higher loadings on the verbal relations factor than do those of a scrambled sentences test and a verbal reasoning test. The overlapping specific in the vocabulary tests appears as a "doublet."

CONCLUSIONS: The answer to the question raised above is "No."

11:25 A.M. The Evaluation of Pairs of Tests for Guidance Use. *George K. Bennett, The Psychological Corporation.* (46)

PROBLEM: In order to advise a client with respect to his educational or vocational plans, it is usual for the counselor to employ a battery of tests and to base his recommendations at least in part upon differences in test scores. Pairs of tests differ greatly in their differential efficacy. It is important that scrutiny be given to this aspect of tests used in guidance.

PROCEDURE: The statistic called "the proportion of differences in excess of the chance proportion" developed by T. L. Kelley is applied to all possible pairs of variables in certain test batteries and to an experimental battery of tests.

RESULTS: One battery yielding three scores purportedly measuring intelligence, mechanical aptitude and clerical aptitude is shown to differentiate only a small percentage of subjects in any of the three pairs of scores.

A second battery of six tests, yielding 15 pairs of scores is reasonably effective with respect to six of the 15 possible differences.

A new battery of eight tests designed to be used in high school guidance work has been constructed with regard to the statistical requirements. Application of the Kelley formula to this battery indicates that nearly all of the 28 pairs of scores surpass the minimum requirements for differentiation.

CONCLUSIONS: 1. Important knowledge regarding the value of teams of tests for guidance purposes results from the application of Kelley's method.

2. By taking into account the effects of reliability and intercorrelation coefficients, it has been possible to construct a test battery of greater differential effectiveness.

11:40 A.M. A Statistical Index of Participation in Discussion. *Warren G. Findley and James E. Greene, Air University, Maxwell Field, Alabama.* (47)

PROBLEM: To express in quantitative terms the evenness of participation in seminar discussions, staff conferences and other face-to-face group situations involving exchange of ideas with a view to solving problems.

POPULATION: Students and instructors, all military officers, in schools of Air University, in groups ranging in size from 6 to 16, who have been assigned responsibility to solve problems by procedures including group discussions.

PROCEDURE: Derivation of a formula for an index of evenness of participation in discussion based on dispersion of recorded frequencies of participation, including establishment of maximum and minimum values of the basic function, determination of constant multiplier to hold the function to a common scale regardless of size of discussion group and extent of discussions, adapting the function to ease of computation and comprehension by users. Also, application of the formula in a variety of situations to indicate the significance of intermediate values in the scale, the sensitivity of the index to recognizable changes in group participation, and the usefulness of the index in describing qualitatively observable differences in discussions.

RESULTS: An Index of Participation $\left[\text{I.P.} = 100\left(1 - \frac{2\sigma^2}{(N\text{-}2)M^2}\right)^2\right]$ was derived. This formula yields a value of 100 when all members of a group participate equally and 0 when the discussion is monopolized by two to the exclusion of all others. A simplified computational form of the formula is presented. Scale values of 90, 80, 70 and 60 were tentatively established as dividing points between 5 levels of evenness of participation from outstanding to unsatisfactory. Preliminary applications in 6 situations showed quantitatively the tendency of consecutive discussions to deteriorate in evenness of participation. These applications also showed a substantial positive correlation between evenness of participation as measured by the index and independent estimates of the quality or level of discussion.

CONCLUSIONS: A promising new quantitative index of significant behavior has been derived and merits experimental application in a variety of appropriate situations to ascertain its values and limitations.

11:55 A.M. Test Calibration for Categorical Classification. *Gilbert L. Betts, Educational Test Bureau.* (48)

PROBLEM: For the purpose of reducing difficulties of clinical judgment in connection with critical scores on a standard scale, to determine empirically the practicability of test calibration in terms of "chances for correct classification" in overlapping criterion categories.

POPULATION: (a) Independent school pupils in grades

from I through VIII, varying in size from 1,458 in grade I to 4,700 in grade VIII with a total of 24,622 cases. (b) Two criterion groups, 1177 prisoners and 1040 socially normal persons.

PROCEDURE: The procedure parallels laboratory experimentation and observation of results. First a pair of adjacent school grades is combined into one distribution to show the nature of the proposed calibration in relation to a normally obtained population having classification possibilities. These two groups are then presented as a pair of overlapping criterion groups from which the desired calibration is obtained. Then successive pairs of distributions with less and less overlapping are presented to show the functional aspects of the proposed scale with differently spaced criterion groups. Finally an application is made to a pair of unknown criterion groups drawn from the adult population and tested by means of a newly constructed test.

RESULTS: The 100-point scale used in calibration falls largely against the overlapping area. Beyond this area the chances for correct classification amounts to practical certainty. With respect to test scores the scale takes the form of an ogive curve. As 100 percent overlapping is approached, the form of the curve corresponds to the cumulative frequency curve in a normal distribution. As overlapping of criterion groups approaches zero, the curve tends to become a straight, perpendicular line centered above a perfectly efficient critical score. Application of the scale in connection with a new test administered to criterion groups drawn from an adult population, produced expected results.

CONCLUSIONS: When a test is to be used for classifying personnel into predetermined categories, the proposed form of calibration has the following advantages over the usual standard scale:

(a) The proposed scale applies automatically to the doubtful range only. (b) When no doubt exists, the scale becomes automatically shortened to a point or negative range. (c) The magnification of the scale is greatest in the central area of greatest doubt and least in the extreme areas of greatest certainty.

SUPPLEMENTARY OBSERVATIONS: (a) Critical scores can be set directly in terms of the amount of risk considered advisable under the circumstances. (b) The scale is of necessity closely bound to the validity of the test.

PERSONALITY

1:40 P.M., Wednesday, September 10

Banquet Room, Hotel Statler

THEODORE M. NEWCOMB, Chairman

1:40 P.M. "Projective Questions" in the Study of Personality and Ideology. *Daniel J. Levinson, Berkeley, California.* (49)

Projective (open-ended) questions, to be answered in a few words or lines, deal with situations or experiences (such as unpleasant moods or awe-inspiring events) which are likely to have emotional significance. The high (prejudiced) and low (unprejudiced) quartiles on an Ethnocentrism Scale (also developed at the University of California Public Opinion Study) were the groups compared, on the hypothesis that their projective item responses would reflect significant personality differences. The data reported were obtained from groups of college students, non-student veterans, psychiatric clinic patients and middle class adults, with a total N of about 300.

A scoring manual defining several response categories for each of the 8 items was used by two independent raters who scored blindly. For each question there were several "high" categories, presumably characteristic of the high-scoring, prejudiced group, and several "low" categories. Responses were scored "high," "low," or "neutral" (omitted, ambiguous, mixed).

Scoring agreement averaged 80–90% for the various groups. The high quartiles received an average of 75–90% high scores, as compared with 20–40% high scores for the low quartiles, all differences being significant at above the 0.1% level.

Examples of low categories for the "awe-inspiring" item: (a) Values referring to personal achievement (intellectual, esthetic, scientific), realization of democratic goals by self and society, etc. (b) Power as exemplified in man's achievements and in nature. (c) Intense nature experiences showing clear signs of esthetic, sensual-emotional involvement. The corresponding high categories are: (a) Values referring to conventionalized sex, ownership, vague sense of virtue, etc. (b) Power in the form of (authoritarian) deference and submission toward powerful people. (c) Dilute, superficial nature experiences.

These and other differences, corroborated by other techniques, suggest that the groups compared differ with respect both to ethnocentric ideology and to deeplying personality dynamics. Some of these personality differences are discussed.

1:55 P.M. Interpreting the Picture-Story (TAT) Method. *Percival M. Symonds, Columbia University.* (50)

PROBLEM: Themes from stories told by a subject in response to pictures are often interpreted as descriptive of the overt personality of the individual telling the stories. In order to test this hypothesis extensive case and life history data were collected from subjects from whom stories were obtained by the picture-story method.

POPULATION: Forty normal adolescent boys and girls

in junior and senior high school, ages 12 to 18. Twenty of the subjects were boys and twenty girls.

RESULTS: There is no appreciable correlation between theme counts and estimates of adjustment. Correspondencies and divergencies have been noted between the fantasy material and the case material in each individual. The divergencies are particularly striking.

CONCLUSIONS: It is not possible to estimate overt personality characteristics or life history material with any degree of certainty from picture-story material. The hypothesis is made that various methods of reacting to a conflict are mutually exclusive. If an individual expresses his conflict by symptomatic behavior he does not have to express his conflict in any other way. If he represses it, it may find expression in fantasy. Picture-story material, which is on the fantasy level, represents principally unconscious and unexpressed drives, impulses, defenses against anxiety and other dynamic tendencies which may be and frequently are the opposite of the expressed personality. It is concluded that content analysis of picture-story (TAT) material has little diagnostic (descriptive) significance and that its principal value comes from using it to reveal underlying dynamic trends.

2:10 P.M. A Study of the Personality of Alcoholic Males. *Helen Marshall, Ogden, Utah.* (51)

PROBLEM: To apply objective methods of evaluation to the determination of: first, whether there are certain environmental factors in the background of the alcoholic which differ in nature or in degree from those found for the generality; and second, whether there are personality differences between the alcoholic and the nonalcoholic which can be measured by existing implements.

POPULATION: The experimental group consists of 120 American-born males between the ages of 20 and 50 who had been committed to mental hospitals in California with the diagnosis of "chronic alcoholic without psychosis." The control group includes 179 men selected as far as possible to form a group comparable to the experimental group in age, education, and occupational level.

PROCEDURE: A combined questionnaire and rating scale was developed for the investigation of the subject's memories of early environment and his evaluation of his present personality. This was supplemented by the use of (1) an abbreviated and revised form of the Chassell Experience Variables Record, (2) The Humm-Wadsworth Temperament Scale, and (3) The Strong Vocational Interest Test.

RESULTS: The alcoholics differed significantly from the control group in their report of early environment in the direction of homes characterized by greater security, both emotional and economic. In adult personality they are below the level of the controls in all the areas of personality which were investigated: vocational, social, emotional, and marital adjustment. All these differences might be related to the changes due to excess use of alcohol.

CONCLUSIONS: There is some basis for the assumption that alcoholism is more likely to develop in an atmosphere which fails to create in the individual the ability to cope with frustration. The characteristic personality differences found in the adult alcoholic can all be interpreted as the result of his alcoholism rather than as etiological factors in its development.

2:25 P.M. Attitudes and Experiences of American-Jewish and American-Irish Male Youth as Related to Adult Inebriety Rates. *Donald D. Glad, Palo Alto, California.* (52)

PROBLEM: To investigate factors associated with the high inebriety rate among American-Irish as compared to the low inebriety rate among American Jews, a study was made of the attitudes and experiences with alcohol among youth drawn from these groups.

POPULATION: (1) An "American-Jewish" group composed of 49 male high-school seniors defined as "Jews" by their reply to a questionnaire item on religious preference. (2) An "American-Irish" group of 49, defined as having at least one parent born in Ireland, and as of "Catholic" religious preference. (3) A "Control" group of 49, defined as 3rd generation American, of Central and North European stock, and of "Protestant" or "no" religious preference. These subjects were matched for age, I. Q., and socio-economic status.

PROCEDURE: (1) Collection of data: Three techniques were employed; (a) a free interview using open ended questions, (b) a detailed printed questionnaire, and (c) a rating scale on which the subject compared a defined drinker with a desirable friend. These techniques were each designed to provide data for the testing of hypotheses.

(2) Analysis of data: The analysis was made first by the testing of three hypotheses, and second by induction. A datum was admitted significant if (a) the Irish or Jewish group differed from both other groups, and (b) if it fitted logically into an explanatory hypothesis.

RESULTS: The hypothesis that the low rate of inebriety among Jews results from a need to conform to the most acceptable social standards was not confirmed. The hypothesis that permissive parental attitudes toward children's drinking will be associated with low inebriety rates, and that a restrictive attitude will be associated with high inebriety rates, was partially supported, in that the Jewish subjects differ (1) in being significantly

younger in average age at which they first *feel permitted* to drink and (2) tending to drink in more casual, matter-of-fact, and parentally approved situations. Irish subjects differed in (1) beginning to drink as early as Jewish, but feeling less "permitted" to do so: (2) in drinking clandestinely and excessively, and (3) in evaluating drinking moralistically. The plausibility that these findings can be readily interpreted as either a cause or a result led to their causal significance being questioned. Findings on the hypothesis that high proof liquors will be preferred in high inebriety groups, were as follows: (1) Irish tend more than Jews or Controls to use high proof liquors, (2) Jews, more than Irish or Controls, tend to use wine. That these differential preferences may logically be expected from other factors associated with inebriety bring their causal significance into question.

An analysis of differentiating items into semantically homogeneous clusters showed the Jews significantly different from others in drinking for socially practical and religiously symbolic purposes. The Irish were different in drinking for the promotion of personal pleasure and social conviviality.

CONCLUSIONS: The Jewish uses of alcohol (for social practicality and religious symbolism) can be formulated as *instrumental* uses for the attainment of goals remote from the direct effects of alcohol *per se*. The Irish uses (for personal pleasure and conviviality) can be conceived as being directed toward *affective consequences* in which the psycho-physiological effects of alcohol *per se* are of primary concern. This Jewish instrumental use, as opposed to the Irish affective use is considered to have central importance in determining the differential inebriety rates, inasmuch as (1) it can be interpreted to describe the genesis of the inebriety tendency, and (2) it is plausibly a cause only, not an effect of the inebriety differences, and (3) it provides explanation of the other differences found between Irish and Jewish subjects, e.g., parental permissiveness and proof of liquor preference differences.

AUDITION

1:40 P.M., Wednesday, September 10

Michigan Room, Hotel Statler

S. S. STEVENS, Chairman

1:40 P.M. The Loudness of Repeated Short Tones. *W. R. Garner, Johns Hopkins University.* (53)

PROBLEM: To show how the loudness of a series of short tones is affected by the repetition rate, and how this relation is influenced by duration, frequency, and intensity of tone.

POPULATION: Seven male college students served as observers. All had normal hearing and some previous experience as listerners.

PROCEDURE: The observer matches two alternating stimuli in loudness, listening monaurally in a sound-deadened room. Two stimuli of the same tonal frequency are 1 second long with 0.25 seconds separating them. One stimulus is a steady tone, the other a series of repeated short tones. Repetition rates varied from 5 to 100 per second, and the change in loudness as a function of repetition rate was investigated with 3 frequencies, 2 intensities, and 5 durations. Additional measures were made with other frequencies and intensities.

RESULTS: Loudness increases with an increase in repetition rate under all conditions. A repeated short tone is louder than a steady tone of equal total energy. The magnitude of both these relations is highly variable between observers, which causes difficulty in stating precise loudness relations. The interaction of the parameters is very complex, but the following general relations hold for all observers.

1. The greater the tone intensity, the more repetition rate affects loudness, and the less duration affects loudness.

2. Thus if two tones have the same total energy, but different duration-repetition rate relations, they will not be equally loud. The tone with the longer duration and slower repetition rate is louder at low intensities, and conversely at high intensities.

3. The shorter the tone, the more repetition rate affects loudness.

4. The slower the repetition rate, the more duration affects loudness.

5. Repeated short tones are relatively less loud in the middle frequency range than at higher or lower frequencies.

1:55 P.M. The Threshold of Audibility and the Threshold of Tonality. *Irwin Pollack, Harvard University.* (54)

PROBLEM: Is there an "atonal" interval in audition analogous to the "achromatic" interval in vision? More specifically, is the threshold for the detection of a sinusoidal stimulus (threshold of audibility) significantly different from the threshold for the recognition of the tonal character of the stimulus (threshold of tonality)?

POPULATION: Two experienced observers, each with "normal" hearing.

PROCEDURE: Thresholds of audibility and tonality were determined by each observer at seven frequencies. The observer varied the signal intensity at his earphone until he could either (1) just detect the presence of an auditory stimulus, or (2) just perceive the tonal character of the stimulus.

RESULTS: 1. The threshold of audibility was found to be significantly lower than the threshold of tonality at each frequency for each of the observers.

2. For each observer, the maximum difference between the two thresholds was at 4000 cycles per second. In all but one case, the difference at 4000 cycles was significantly greater than the difference at the other frequencies.

3. The intra-trial variance of each of the thresholds was significantly lower than the inter-session variance.

4. Little difference was found between the variances of the thresholds of audibility and of tonality. Observers are able apparently to distinguish reliably between *audibility* and *tonality* and are able to make threshold judgments based on either criterion.

This research was conducted under Contract N5-ori-76 between Harvard University and the Office of Naval Research.

2:10 P.M. An Auditory Analogue of Visual Flicker. *George A. Miller, Harvard University.* (55)

PROBLEM: Random "white" noise, when interrupted at a regular rate, provides an auditory stimulus comparable to the interrupted light used in studies of visual flicker. With such a stimulus, three experiments were designed to explore (1) the critical rates of interruption at which fusion occurs, (2) sensitivity to changes in the rate of interruption, and (3) the ability to adjust a pure tone to a frequency corresponding to the rate of interruption of the noise.

POPULATION: Ten male listeners with normal hearing were used.

PROCEDURE: Electronic equipment produced and interrupted the noise. The rate of interruption, the sound-time fraction, and the intensity of the noise could be varied by known amounts.

RESULTS: The point at which an interrupted noise fuses into a continuous perception depends upon the rate of interruption, the sound-time fraction, and the intensity of the noise. In general, the ear is much more sensitive to interruptions than the eye, and a difference between continuous and interrupted noise can be reported at rates well above 1000 interruptions per second. Differential sensitivity to changes in the rate of interruption—with a sound-time fraction of 0.5—is poor above 250 interruptions per second. Also at these high rates the listener loses his ability to match the frequency of a pure tone to the rate of interruption.

CONCLUSIONS: The detection of the difference between continuous and interrupted noise depends upon the rate at which the auditory mechanism recovers from stimulation. From simple assumptions about this rate of recovery and a knowledge of sensitivity to differences in the intensity of noise, the conditions for perceptual fusion can be predicted. The ability to match the rate of interruption with the frequency of a pure tone is puzzling, since fluttering noise provides no outstanding components at that frequency for analysis by the resonant mechanism of the cochlea. Presumably the ability depends upon the synchronous firing of the fibers in the auditory nerve. Such a hypothesis is supported by the close and suggestive correspondence between the sensitivity of the auditory system to changes in the rate of interruption of a noise and the tactual sensitivity to changes in the frequency of a vibrating pressure applied to the skin.

The author is indebted to Mr. W. G. Taylor for assistance in obtaining the experimental data. This research was conducted under contract with the U. S. Navy, Office of Naval Research.

2:25 P.M. A Verbal Audiometric Test for Young Children. *Lee Meyerson, Vassar College.* (56)

PROBLEM: Construction of a verbal audiometric test to measure audition in pre-school children.

EXPERIMENTAL POPULATION: Selected children in the Vassar College Nursery School, Poughkeepsie day school, and Poughkeepsie public schools. $N > 50$.

PROCEDURE: A systematically attenuated recording of 36 dissyllabic words of the spondee stress pattern is administered thru high fidelity playback and earphone equipment to from 1 to 10 subjects. Response consists of pointing to a picture corresponding to the stimulus word heard.

RESULTS: 1. The threshold of speech hearing for children with normal hearing is easily established.

2. Using this level as a criterion, children with hearing losses are easily, quickly, and reliably identified.

3. Children who are not responsive to pure tone audiometric testing, or who do not respond consistently, can be tested with the method described.

4. There appears to be a close relationship between a child's hearing as measured by the verbal audiometric test and as measured by a pure tone test.

CONCLUSIONS: A simple, reliable method for testing the hearing of young children has been described.

PERSONALITY TESTS

Program arranged by the Division of Counseling and Guidance Psychologists

2:50 P.M., Wednesday, September 10

Banquet Room, Hotel Statler

JOSEPH M. BOBBITT, Chairman

2:50 P.M. The Development of Diagnostic Tools to Further Remedial Instruction. *Robert M. Bear*

and the Committee on Diagnostic Reading Tests. (57)

PROBLEM: Research has proved that much of the inefficient reading now found among students at all educational levels can be remedied. Only a small part of what can be done, is being done, however, and as a result student mortality due, in a large part, to poor language skills, is still great. One of the reasons for this is that most remedial reading is being done by clinicians highly skilled in the work. There are few such skilled clinicians and they cannot handle the volume of work which needs to be done. It has been demonstrated that a large portion of the work can be done by personnel workers and subject matter instructors if the technique and tools are adapted to their needs. This would leave only the more serious cases to be referred to the clinicians, who also should be well-prepared clinical psychologists; for a person whose reading skills do not improve when instruction is varied to his needs probably needs therapy of a more generalized nature than specialized remedial reading instruction offers.

POPULATION: The population on which the tests are being tried out is approximately six thousand persons, seventh grade through college freshmen distributed over a large geographical area and in approximately seventy-five schools and colleges. Approximately the same population is being reached by remedial programs.

PROCEDURE: Recognizing the existence of the problem described, eight specialists in the field of reading obtained a grant of six thousand dollars to (1) determine in what areas remedial techniques which could be applied without much specialized training had been found successful; (2) build a battery of tests which can be administered by persons who have not had specialized training in testing or remedial work, the interpretation of which would lead directly into areas of remedial work from which the student would profit;

(3) follow up on the testing and remedial work with research and development of other tests and materials as they are needed in order to encourage the individualization of reading instruction. The Committee is operating on a non-profit basis, making the tests available at the most reasonable figure possible. Any money accruing from the sale of tests is to be returned to research on them and on related remedial techniques.

RESULTS AND CONCLUSIONS: The investigation of areas where remedial techniques which could be applied successfully by a person without much specialized training revealed these areas to be: (1) vocabulary (2) comprehension (3) rate of reading, in various specialized areas, and (4) word recognition and word attack. A previous report has been made on the survey test which has been developed and the projected diagnostic tests in these areas. This paper concerns itself with a specific description of the diagnostic tests and the remedial programs which may follow the use of such tests.

3:05 P.M. An Evaluation of Counselor Consistency. *Milton E. Hahn, Psychological Services Center, Syracuse, New York.* (58)

PROBLEM: An evaluation of inter-counselor consistency in diagnosing educational-vocational alternatives for adult male cases.

POPULATION: Fifty adult male veterans of World War II selected within bands of measured academic ability from the files of the Syracuse University Veterans Advisement Program.

PROCEDURE: The sample of 50 adult male veterans was selected at random from a file of 1,500 cases. The case notes of the original counselor were removed and each of the 50 case folders reviewed by each of 4 counselors in the Veterans Advisement program at Syracuse University. Each counselor assigned three three-digit code numbers from the D.O.T. in order of judged appropriateness for each case. Extent of agreement among and between counselors was determined for these assignments. The 600 job labels were re-interpreted into 44 differentiated ability patterns and comparisons made among and between the counselors' judgments in terms of first, second, and third judgments. Comparisons were made of occupational field, occupational level, and field-level combined.

RESULTS: 1. In only one instance did 2 counselors agree well on first choices, with three-digit D.O.T. codes. 2. Second and third choices for counselees, in terms of the D.O.T. codes, showed little inter-counselor agreement. 3. Use of combined field-level ability choices increased perfect agreement on first choices over D.O.T. three-digit counselor assignments from 8% to 24%. 4. Field-level agreement by 4 counselors as one of 3 alternatives regardless of order of judged appropriateness was 90%.

CONCLUSIONS: 1. Use of three-digit (or more) code numbers from the D.O.T. for purposes of diagnosing appropriate occupational outlets was confusing and leads to lack of agreement among experienced counselors. 2. Use of ability pattern diagnosis leads to much greater agreement among counselors.

Acknowledgement is made of Mr. Stanley Ostrom for his part in this research.

3:20 P.M. Implications of Social Dynamics for Methods of Therapy with College Students. *Harold B. Pepinsky and Pauline N. Pepinsky, Michigan State College.* (59)

PROBLEM: To analyze some implications of social dynamics for methods of therapy with college students. DISCUSSION: Professional psychologists, providing therapeutic services on the college campus, must turn from a preoccupation with psychological factors in adjustment to a recognition of sociological aspects. Whereas psychological services in prewar years were, for the most part, limited to individual therapeutic contacts for assisting students to solve problems of adjustment, increasing recognition is being given to therapy in the social group. Not only have increased enrollments and scarcity of competent personnel placed a heavy burden on individual therapeutic services, but a highly unstable social structure has forced the psychologist to be more concerned with the individual in his role as a member of society. Examples of such trends in therapy are: (a) group therapy in the classroom, (b) use of group methods in conjunction with individual therapy in the specialized counseling agency, (c) emphasis upon housing and activities programs as therapeutic media, (d) use of sociometric techniques to supplement psychometric methods in measuring individual adjustment, (e) recognition of greater socially induced tension in primary family groups (larger numbers of married students), and (f) awareness of the influence of shifting economic conditions upon vocational opportunities for students. CONCLUSIONS: Although psychologists have repeatedly emphasized that adjustment must be evaluated in terms of cultural norms, the psychologically trained therapist at the college level has relied upon a relatively stable social framework. The assumption of unvarying cultural criteria of adjustment is no longer tenable. This condition implies a necessity for greater breadth of training in social dynamics and a greater flexibility in the use of therapeutic techniques.

3:35 P.M. Relative Correspondence of Professed Interests to Kuder and Strong Interest Test Scores. (60) *Edward S. Bordin, State College of Washington.*

PROBLEM: In an earlier publication, Bordin advanced a theory, expressed in terms of Strong test phenomena, that in taking an interest test the individual was expressing his concept of himself in terms of occupational stereotypes. If this is true, a test which taps deeper less verbalized reactions toward oneself will have a greater contribution to make in counseling and selection. Similarly, Paterson has recently suggested that the Strong Inventory is to be preferred to the Kuder as a selection device because it is more subtle in that the vocational significance of the items are not so readily apparent to the person taking the tests. The purpose of this study is to test the hypothesis that the two tests differ in subtlety by comparing the correspondence of test scores to professed interests. It is assumed that the less subtle test will show greater correspondence between professed and measured interests.

POPULATION: Ninety college students who had sought vocational counseling.

PROCEDURE: During the counseling process, the subjects, in addition to taking the two tests, had occasion to fill out a questionnaire which included: (1) a request to list in order of preference the five occupations they would prefer without regard to abilities or opportunities; (2) a request to list in order of preference in terms of abilities and interests three of seven presented general occupational groupings. These were taken as two types of evidence of professed interests. One more source of expression of professed interest was obtained by listing the occupation upon which the student's desires appeared to be focused as he started the counseling process. This was obtained from summaries of interviews.

RESULTS: Tabulations will be made of the correspondence between each of these three types of expression of professed interests and degree of expression of these interests on corresponding scales of the Strong and Kuder tests, respectively. For convenience as well as for theoretical reasons, the A, B+, B, etc., categories will be used for the Strong. The Kuder scores will be converted to the corresponding terms. Relationships between professed and measured interests, computed by means of chi-square and contingency coefficients, will be compared for the two tests in terms of intensity and order of preference.

THE HUMAN RETINA

2:50 P.M., Wednesday, September 10

Bagley Room, Hotel Statler

HENRY IMUS, Chairman

2:50 P.M. The Electrical Response of the Human Retina During Dark-adaptation. (61) *E. Parker Johnson, Brown University.*

PROBLEM: To determine the temporal course of dark-adaptation as revealed by the electrical response of the human retina.

POPULATION: One color-normal, emmetropic eye.

PROCEDURE: The electrical response was recorded at selected intervals during the course of dark-adaptation. Various intensities of white and colored light were employed in stimulation. Dark-adaptation was continued to 90 minutes. The amplified responses actuated a loop-oscillograph and were recorded photographically on a moving tape. Pre-adaptation was to a field of white light having a brightness of 1.73 footlamberts. Central fixation only.

RESULTS: Results are presented showing the increase in

the amplitude of the principal *b*-wave as a function of time in the dark and as a function of stimulus intensity. Results for white, red, yellow, and blue light are similar. "Dark-adaptation curves" based on the amount of light required at different times-in-the-dark to elicit responses of equal magnitude are shown.

CONCLUSIONS: Similarities between the responses suggest that the principal *b*-wave represents scotopic rather than photopic function, whatever the color of the stimulus. Red- and blue-responses were easily distinguished on the basis of differences in the early portions of the responses. The possibility of relating these results to our knowledge of the subjective phenomena of human vision is discussed.

3:05 P.M. A Comparison of Threshold Acuities for Vernier, Real Depth, and Stereoscopic Tasks Under Similar Conditions. *Richard N. Berry, Brown University.* (62)

PROBLEM: The problem under investigation in the present experiment is the determination of quantitative relations among the thresholds for vernier, real depth, and stereoscopic tasks.

POPULATION: Three adult male humans with 20/20 Snellen acuity.

PROCEDURE: Two, black, cylindrical test objects (rods), one above the other in the median vertical visual plane were viewed through apertures such that contours other than those of the rods were minimized. The subjects, under one condition (vernier), were required to judge whether the bottom rod was to the right or left of the upper one; in the second condition (real depth) the response was back or front. A third condition (stereoscopic depth), in which two sets of vernier objects were viewed through right angle prisms such that one vernier displacement was presented to one eye while an equal and opposite displacement was presented to the other eye, also required a back or front judgment. The method of constant stimuli was employed. The vertical separation between the rods was varied from 3.6″ to 891″ of visual angle; six separations were employed. Each of the test rods subtended 107″ in the horizontal plane, and the two rods subtended an angle of 1° 23′ 7″ in the vertical plane minus whatever vertical separation was used. The brightness of the field was 114 millilamberts.

RESULTS: When the threshold visual angles are considered as a function of the various separations of the rods, the curves for the real depth situation and the stereoscopic depth situation are similar in shape and have a curvilinear form with the best thresholds at the intermediate separations. The curve for the stereoscopic situation is displaced upwards from that of the real depth situation by about .2″ of arc. The curve for the vernier situation is similar in shape to the curves for stereoscopic depth and real depth for separations of the rods above 135″, but the actual thresholds for vernier acuity are slightly less than twice as large. For the smaller vertical separations of the rods the vernier acuity is superior to both types of depth acuity.

CONCLUSIONS: It is concluded that for vertical separations of more than 135″ between the test objects vernier and real or stereoscopic depth acuity have a simple relation and that depth acuity is slightly less than twice as good as vernier. For the smaller vertical separations the relation is more complex, and vernier acuity is superior to both types of depth acuity.

Real depth acuity and stereoscopic acuity obtained by presenting equal and opposite vernier displacements to each eye by means of right angle prisms are, quantitatively the same.

3:20 P. M. Electrical Measurements of the Adaption of the Human Retina to Constant Levels of Illumination. *L. A. Riggs and E. P. Johnson, Brown University.* (63)

PROBLEM: To determine the relative sensitivity of the retina to flashes of light of various wave-lengths at various constant levels of adaptation.

PROCEDURE: The eye was first dark-adapted and then brought to a steady state of light adaptation by prolonged fixation on the center of a uniform field. Five separate levels of adapting brightness were explored during the course of the experiments. Brief (0.04 sec.) flashes of light were added at the central region of the adapting field. The responses of the retina to these flashes were recorded electrically with the aid of a corneal electrode attached to a contact lens. In this way an objective record was obtained of the influence of level of adaptation upon visual responses.

RESULTS: When the eye is adapted to a brightness level of two millilamberts, the retinal response to a flash of white light consists of brief negative, positive and second negative components. At an adapting level one log unit lower in brightness, a flash which is one log unit less intense yields a response which is similar in amplitude, but with less negativity and longer latency in each component. A two or three log unit reduction in adapting brightness effects a corresponding reduction in the intensity of flash necessary to yield an approximately equivalent response. Complete darkness, however, is equivalent to a level of about 0.001 millilambert for the flashes used in these experiments. Responses to the various colors reveal characteristic differences in wave-form.

CONCLUSIONS: Over a considerable range of adapting brightnesses, the retina appears to compensate perfectly

for reductions in level of illumination, by responding to proportionately lower intensities of stimulation. Responses are much slower, however, at the lower levels. These findings, obtained by an objective method, are independent of events in the higher visual centers. Yet they are consistent with psychophysical data on reaction time and critical frequency of fusion for low levels of illumination. It seems clear that a major portion of this process of compensation occurs in the retina itself.

3:35 P.M. The Relationship Between Critical Flicker Frequency and Flash Duration. *Neil R. Bartlett, Johns Hopkins University.* (64)

PROBLEM: Three common assumptions found in Hecht's discussion of the visual process have been developed to predict flicker data, and from them, intensity discrimination. The prediction of a linear relationship between the reciprocals of flash duration and time between flashes for critical flicker frequency is tested in this experiment. The relationship between flicker and flash duration is an important consideration in design of visual display equipment associated with radar.

PROCEDURE: The dark interval (dark-time) between flashes for critical flicker frequency (cff) has been determined with two observers for various flash durations (light-times) and for different flash intensities. Foveal presentations with "white" light were made.

RESULTS: (1) As light-time increases, dark-time for cff progressively decreases, until it approaches a constant time value dependent upon intensity; (2) cff first increases, then decreases as light-time is lengthened; (3) there is a marked dependence of the data upon intensity, as of course was anticipated from previous studies; (4) the light-time:dark-time ratio for maximum cff progressively decreases with higher intensities; and (5) the functions relating dark-time to light-time for cff do *not* conform to the theoretical predictions.

CONCLUSIONS: The empirical results are useful as they stand in radar development, so applications merit little discussion. The failure of the theory to account for the data is another matter, especially since this theory has been developed to relate other kinds of visual data to flicker. The assumptions are insufficient, or some one or more of the three is invalid. One of them—that the response to a flash is an amount rather than a rate effect —is susceptible to a simple experimental check. On the basis of this check it appears valid, so the other two assumptions are held in strongest doubt. These assumptions are that discrimination data can be accounted for in terms of a bimolecular excitation and recovery process, and that any discrimination threshold is some constant effect.

ACKNOWLEDGMENT: This research was carried out under Contract N5-ori-166, Task Order I, between the Special Devices Center, Office of Naval Research, and The Johns Hopkins University.

SYMPOSIUM: TEACHING OF PSYCHOLOGY

Sponsored by the Division on the Teaching of Psychology

3:00 P.M., Wednesday, September 10

Michigan Room, Hotel Statler

FLOYD L. RUCH, Chairman

Speakers: PAUL A. WITTY, "Psychological Implications of the Army Program for Illiterates"

CARL PFAFFMANN and HAROLD SCHLOSBERG, "The Laboratory in Undergraduate Psychology Courses"

MASON HAIRE, "Education as a Barrier"

CLARENCE LEUBA, "Psychology's Place in a Two Year Course in the Life Sciences"

SYMPOSIUM: BASIC PRINCIPLES IN DIRECTIVE AND NON-DIRECTIVE COUNSELING

Sponsored by the Division of Consulting Psychology

3:00 P.M., Wednesday, September 10

Crystal Ballroom, Hotel Book-Cadillac

This program will present the principles or fundamental precepts underlying the procedures of Directive and Non-Directive Counseling, and their application. It is expected that the discussion will emphasize specific areas and range of usefulness for each approach.

ROBERT A. BROTEMARKLE, Chairman

Participants: FREDERICK C. THORNE, Ph.D., M.D., Editor of the Journal of Clinical Psychology, University of Vermont, and ARTHUR W. COOMBS, Ph.D., Director, Psychological Services Center, Syracuse University

Discussants: DORIS TWITCHELL-ALLEN, Ph.D., Psychologist Children's Hospital, E. LOWELL KELLY, Ph.D., University of Michigan, and JERRY W. CARTER, JR., Ph.D., Director, Wichita Guidance Center, Wichita, Kansas

SYMPOSIUM: ROLES OF ACTION AND BASIC RESEARCH IN SOCIAL PSYCHOLOGY

Sponsored by The Society for the Psychological Study of Social Issues

3:00 P.M., Wednesday, September 10

Italian Garden, Hotel Book-Cadillac

The symposium will center about the following problem faced by social scientists who are interested in the

ineffective utilization by society of social science knowledge: whether the use of their scientific status in promoting controversial issues although immediately effective may result in retarding the development of public confidence in the reliability of social science knowledge.

DONALD G. MARQUIS, Chairman

TESTS

Program arranged by the Division of Counseling and Guidance Psychologists

4:00 P.M., Wednesday, September 10

Banquet Room, Hotel Statler

HERBERT WOODROW, Chairman

4:00 P.M. Subtle and Obvious Keys for the Minnesota Multiphasic Personality Inventory. *Daniel N. Wiener, St. Paul, Minnesota.* (65)

PROBLEM: Can independent subtle and obvious keys for personality test scales be developed; if so, is there a meaningful difference between these keys?

POPULATION: (1) Norm Group: 100 men of original norm group of Minnesota Multiphasic Personality Inventory; (2) Validity Studies: 53 ASTP psychology students; 40 high and 29 low ability counselees; 50 counselees with high and 45 with low "Lie" scale scores; (3) Statistical Studies: 100 random MMPI test sheets for intercorrelations, and 152 for correlation with "K".

PROCEDURE: 1. All items on eight scales of MMPI divided into relatively "Subtle" and "Obvious" categories for emotional implications.

2. Answer sheets of original MMPI norm group rescored to develop separate norms for "S" and "O" keys.

3. Average S and O standard scores computed for ASTP psychology class, high and low ability groups, and high and low "Lie" score groups.

4. Pearsonian r's computed for interrelationships of S, O, and total scores; and between O minus S, and K scale.

RESULTS: 1. On five scales of the MMPI, positive skews developed for "O" keys compared with relatively normal distributions for "S" keys; standard score norms were developed for S and O keys on these five scales.

2. Sophisticated psychological, high intelligence, and high "Lie" scale groups all were higher on S keys than O, with the reverse true for low intelligence and low "Lie" scale groups.

3. An intercorrelational table suggests high relationships among S and O keys of different scales; relatively high positive correlations exist between "K" scale and "O" minus "S" scores.

CONCLUSIONS: 1. "Subtle" and "Obvious" keys and standard score norms were developed and studied for five scales of the Minnesota Multiphasic Personality Inventory.

2. Meaningful differences between and interpretations of S and O have been developed which total scale scores do not provide.

3. While O items contribute largely to validity for institutionalized groups, S items may prove the more valuable with relatively normal, psychologically sophisticated, or intellectually superior populations.

4:15 P.M. A Study of the Relationship of Measured Interests to Measured Mechanical Aptitude, Personality, and Vocabulary. *Frances Oralind Triggs, New York.* (66)

PROBLEM: The use of the interest inventory as one of the basic tools in the counselling process has become an accepted procedure well-justified by research. However, there is much research to be done to clarify the relationship of interests as measured by carefully constructed interest inventories to measurement of aptitudes, abilities, and personality. This study summarizes what has been done in this field and extends it by presenting relationships found between scores on an interest test and scores on tests of personality, mechanical aptitude, and vocabulary.

POPULATION:

University Students: Male

Data: N 35 Kuder Preference Record. Minnesota Multiphasic
N 38 Kuder Preference Record. Purdue Peg Board
N 73 Kuder Preference Record. Minnesota Paper Form Board
N 36 Kuder Preference Record. Minnesota Spacial Relations
N 102 Kuder Preference Record. Moore Engineering
N 120 Kuder Preference Record. Michigan Vocabulary

University Students: Female

Data: N 62 Kuder Preference Record. Minnesota Multiphasic
N 40 Kuder Preference Record. Purdue Peg Board
N 61 Kuder Preference Record. Minnesota Paper Form Board
N 42 Kuder Preference Record. Minnesota Spacial Relations
N 37 Kuder Preference Record. Michigan Vocabulary

PROCEDURE: Correlations were run (separately for males and females) between the nine scores on the *Kuder Preference Record* with scores on the *Minnesota Multiphasic*, the *Michigan Vocabulary*, the *Purdue Peg Board*, the

Minnesota Paper Form Board, the *Minnesota Spacial Relations*, and the *Moore Engineering Tests*.

RESULTS: The report presented here summarizes previous work done on the relationship of interests to personality and presents the relationship found between the scores on the *Minnesota Multiphasic* and the *Kuder Preference Record*.

CONCLUSIONS: The correlations found in this study suggest that there are some relationships between the personality as measured by the *Minnesota Multiphasic* and the *Preference Record*. A biserial technique is going to be applied to the same data to determine whether these relationships can be brought into even sharper focus.

4:30 P.M. The Use of Tests in the Selection of Medical Students by the College of Medicine of Syracuse University. *William E. Kendall and Milton E. Hahn, Psychological Services Center, Syracuse University.* (67)

PROBLEM: To select a test battery which will aid in improving the procedures used in admission of medical students by the College of Medicine of Syracuse University.

POPULATION: 244 students distributed among the four classes of the College of Medicine at Syracuse University.

PROCEDURE: An extensive test battery requiring 1½ days was administered to all students in February, 1946, and to the entering class in September, 1946. In addition, personal history information, pre-medical grades, medical grades, and ratings by faculty members were obtained for all students. These data were coded and punched on I.B.M. cards and intercorrelations between the tests in the battery and correlations between tests and medical school grades were computed.

RESULTS: Preliminary findings indicate (1) in classes which had completed one or more years of medical school at the time of testing, in general, the correlations were small between first year grades and individual tests in the battery. It is believed that this finding is in part due to (a) prior elimination of unsatisfactory students with consequent restriction of effective range (b) restricted range of medical school grades (c) method of selection of those classes which entered under war time conditions. (2) In the two classes tested prior to completion of one year significant correlations exist between Miller Analogies (Form G), Speed of Reading, Strong VIB (Physician's Key), Kuder (Scientific Key), Minnesota Clerical (Number Checking) and first year grade average. (3) Using a multiple criterion score set to exclude all failures, it was found that about ten per cent of those who completed the first year would also have been excluded.

CONCLUSIONS: The tentative conclusion based on preliminary results is that a short test battery employed to supplement present selection procedures will reduce the number of first year failures in the College of Medicine at Syracuse University.

This report was prepared in collaboration with Miss Dorothy Clendenen.

4:45 P.M. A Comparison of the Moore Eye-Hand Coordination and Color Matching Test with Other Dexterity Tests. *Joseph E. Moore, Georgia School of Technology.* (68)

PROBLEM: A Comparison of the Moore Eye-Hand Coordination and Color Matching Test with Other Dexterity Tests.

POPULATION: Fifteen hundred and thirty-eight veterans tested over a two year period.

PROCEDURE: Statistical comparison.

RESULTS: A comparison of the Moore Eye-Hand Coordination and Color Matching Test with other dexterity tests gives the following results:

Tests	*No. of Veterans*	*Coefficient of Correlation*	*P.E.*
Moore Eye-Hand Coordination vs			
Minnesota Rate (Placing)	157	.67	.03
Minnesota Rate (Turning)	191	.45	.04
O'Connor Finger	662	.33	.02
O'Connor Tweezer	175	.29	.05
Penn. Bi-Manual (Assembly)	317	.51	.03
Penn. Bi-Manual (Dissembly)	317	.49	.03
Moore Color Matching vs			
Minnesota Rate (Placing)	103	.53	.05
O'Connor Tweezer	133	.54	.04

The Moore Eye-Hand Coordination correlated .67 ± .02 with speed of Color Matching N = 364.

CONCLUSIONS: It would seem that the Moore Eye-Hand Coordination Test is measuring similar types of dexterity to those measured by the Minnesota Placing and Turning Test as well as that found in the Penn. Bi-Manual Assembly and Dissembly. Because of the sizeable correlation it would seem a waste of time to administer the Moore Eye-Hand Coordination Test along with either the Minnesota Rate of Manipulation or the Penn. Bi-Manual Test. The ability or abilities measured by the Moore Eye-Hand Coordination Test and that measured by the O'Connor Finger and Tweezer is less similar than those found in the other tests.

The Color Matching Test appears to be measuring similar speed traits as those measured by the Minnesota Rate (Placing) and the O'Connor Tweezer. The Eye-Hand Coordination and Color Matching Test would appear to have value as a supplementary instrument to the O'Connor Finger and Tweezer. The fact that both the Eye-Hand Coordination and the Color Matching Tests

can be given in half the time required to administer other tests compared here might make it preferred, especially in view of the common factor which seems to be operating through the various tests.

VISUAL PERCEPTION

4:00 P.M., Wednesday, September 10

Bagley Room, Hotel Statler

J. J. GIBSON, Chairman

4:00 P.M. A Factorial Study of Visual Acuity, Depth, and Phoria Measurements with Three Commercial Screening Devices. *Robert J. Wherry, Personnel Research Section, ACO.* (69)

PROBLEM: To determine the extent to which visual measurements based upon commercial screening devices are comparable with each other and with measurements obtained by standard opthalmological methods.

POPULATION: Far and near acuity, depth, and phoria measurements by Orthorater, Sight Screener, and telebinocular, Maddox rods, and wall charts for 128 observers, furnished by Medical Research Department, U. S. Submarine Base, New London, Connecticut. Age and interpupillary distance were recorded. Sleep, sex of subject, illness, and alcohol ingestion were controlled.

PROCEDURE: A modified group centroid method was applied to five matrices: (1) left eye acuity, (2) right eye acuity, (3) binocular acuity and depth, (4) phorias by Orthorater and Maddox rods with age, and (5) phorias by three commercial methods and Maddox rods with interpupillary distance. Axes were rotated for meaning within an orthogonal structure. Loadings were verified by use of test and retest in same matrix.

RESULTS: 1. Factor patterns are highly stable from eye to eye and from test to retest.

2. Commercial screening devices measure in part the same factors as do standard ophthalmological devices, but (a) are sometimes better and sometimes poorer than standard methods, (b) vary in efficiency with type of measurement and in general level of efficiency, and (c) contain high specific and/or error variance for some measurements (same is true for standard methods).

3. Explanations are advanced for failure of various methods in specific instances.

CONCLUSIONS: 1. Care should be exercised in choice of visual testing devices to assure suitability of machine for desired purpose.

2. Validities based upon one method of measurement should not be assumed to hold for same type of measurement obtained by another method or instrument.

3. Construction of new test charts or slides for commercial machines must be prepared with care to avoid repetition of errors found currently.

4:15 P.M. The Anchoring Effect in the Direct Estimation of Visual Inclination. (This research was carried out under contract with Special Devices Center, Office of Naval Research.) *T. W. Reese, Mount Holyoke College.* (70)

PROBLEM: To determine the effect of both subjective and experimentally introduced anchoring agents on the accuracy and variability of direct estimate of visual inclination.

POPULATION: The experiments utilized 33 female and 20 male subjects. In all, approximately 70,000 estimates of visual inclination were obtained.

PROCEDURE: The object whose inclination was to be judged was a line of light projected from the rear on a round ground glass screen four feet in diameter. The subjects were instructed to give a direct estimate of the presented inclination in degrees, calling the vertical 0 degrees, all inclinations to the right plus, and all to the left minus. The line varied in inclination over a range of 110 degrees, from minus 10 to plus 100. The stimuli were exposed for ½ second.

In a second part of the experiment, two anchoring agents were introduced. First a line of light, continually present at the vertical, and secondly a line of light continually present at 30 degrees.

RESULTS: Both average error and variability increase from 0 to 30 degrees, decrease in the region of 45 degrees, and then increase from there to 75, when there is again a decrease in the region of 90.

Introduction of anchoring agents at 0 and 30 degrees had the effect of reducing error and variability not only at these points but over a wide range of inclinations. However the introduction of these agents changed the sign of the error.

CONCLUSIONS: The vertical and horizontal act as natural anchoring agents, and because of the ease of bisecting the right angle, 45 degrees exerts some anchoring effect.

The experimental introduction of anchoring agents reduces the error and variability over a wide range, but changes the sign of the error of estimation.

4:30 P.M. Some Experimental and Theoretical Relationships Between Area and Brightness at Suprathreshold Levels. *Lloyd Henry Beck, Yale University.* (71)

Stimulus-response theory leads to a new solution of Fechner's problem of the relationship between threshold and suprathreshold psychophysics. For the case of vision derivations from three assumptions predict that a subject can manipulate area-brightness sequences numberwise. The three assumptions are: (1) any change in stimulation that is just psychologically effective must produce a constant change in muscular activity, (2) in

the sequence of transformations (optical, photochemical, neural, etc.) from stimulus to response no transformation alters the preceding transformations, (3) unknown transformations operate collectively linearly. With these assumptions psychology can contribute to the mathematical theory of vision in that the threshold response is treated as a set of product functions operating on the essential variables of the threshold visual stimulus. Continuity is not necessary for integrating these functions to predict suprathreshold relationships.

Ten subjects were presented a set of five brightnesses consisting of a large uniform rectangular background brightness on which were superimposed symmetrically a pair of two concentric areas, an annulus and a disc. The set of brightnesses and areas lay within the region where contrast sensitivity is independent of area, duration, and adaptation brightness. These conditions lead to computational simplicity since optical distortions in the retinal image can be neglected, and since certain terms in Hecht's theory can be neglected. With four of the five brightnesses arbitrarily fixed, an absolute prediction of the brightness setting a subject will make under subtractive, additive, and positive and negative multiplicative procedures was confirmed within the expected error region. Mr. P. Ratoosh assisted in the experiment.

4:45 P.M. The Effect of Knowledge of Scores on Learning a Simulated Tracking Problem. *Robert S. Sackett, Naval Research Laboratory.* (72)

PROBLEM: To compare learning to track a simulated aircraft target with and without knowledge of results. To determine the effect on the same task of withdrawing or introducing knowledge of scores after initially learning with or without knowledge of scores.

POPULATION: Twenty young male subjects without previous experience in tracking were divided into two equated groups on the basis of an initial tracking test.

PROCEDURE: One group of subjects was given twenty trials a day for five days in attempting to keep a dot of light on a vertical hairline on the scope of a cathode ray tube. The dot simulated in train only the movement of an aircraft on a crossing course at 460 yards range. By means of a joy-stick the subject controlled the position and rate of movement of the dot. Before each trial the subject was told a score representing the time that the dot was not on the vertical hairline on the previous trial. He was also given his score at the end of the course. At the end of the daily session of trials he was given his average score for the day. In addition, each day his average score was plotted on a graph to give a visual record of the subject's progress.

The other group of subjects was given the same treatment but was given no knowledge of their scores whatsoever.

On the sixth day, the conditions were reversed so that the first group was practicing without knowledge of scores, while the other group now received the scores for each run, the average score for each day and were shown their graphs. Three more daily practice sessions were held under the changed conditions.

RESULTS: 1. During the first five days, learning in both groups proceeded with negative acceleration.

2. No significant differences appeared between the two groups as to rate of learning.

3. On the sixth day when the conditions for the two groups were reversed the group now without knowledge improved only slightly while the group now getting scores reduced their errors significantly.

4. On the remaining three days, the group now without knowledge again began to reduce their errors slightly, but not as much as the group now getting their scores.

CONCLUSIONS: 1. On a task such as tracking a simulated target where the individual has some idea of how well he is doing, knowledge of specific scores appears to have little effect on initial learning.

2. This probably holds true only where the subjects are strongly motivated to do their best in the task.

3. Failure to find any effect of knowledge of scores in the initial stages of learning appears to be due to other strong motivating factors, including a desire to do well and a spirit of rivalry which masks out the effect of precise knowledge of scores.

4. Where learning has been proceeding without knowledge of scores and such knowledge is introduced, it serves to motivate the learner to perform at a higher level, indicating the presence of "latent" learning which persists for several days.

5. Withdrawal of knowledge of scores in the later stages of learning is only slightly detrimental to performance.

6. The experiment suggests that the use of scoring systems on devices for developing skill may have a motivational value although the subject has no immediate knowledge of his scores.

MEETING OF THE COUNCIL OF REPRESENTATIVES

8:00 P.M., Wednesday, September 10

English Room, Hotel Statler

ADDRESSES BY FOREIGN PSYCHOLOGISTS

8:15 P.M., Wednesday, September 10

Rackham Memorial Building

Several foreign psychologists will speak on the topic of the contributions of psychology to education.

HERBERT S. LANGFELD, Chairman

INVITED ADDRESS

8:15 P.M., Wednesday, September 10

Rackham Memorial Building

HENRY BROSIN, "Some Contributions of the Clinic to Research Methods"

Leonard Carmichael, Chairman

THURSDAY, SEPTEMBER 11
ANIMAL LEARNING I

8:50 A.M., Thursday, September 11

Banquet Room, Hotel Statler

HARRY F. HARLOW, Chairman

8:50 A.M. How Cooperatively do Individual Rats Solve a Problem in a Social Situation? *William J. Daniel, University of North Carolina.* (73)

PROBLEM: Can rats learn to solve a problem cooperatively and can the cooperativeness of discrete aspects of an individual animal's behavior be quantitatively measured?

POPULATION: Eight hooded rats, 5 males and 3 females, approximately 100 days old at the start of the experiment.

PROCEDURE: Individual rats were first trained to feed and to escape shock in a cooperation box 6″ wide x 38″ long x 4″ high. In the experimental trials pairs of 23 hour hungry rats were run 12 two-minute trials a day for 60 consecutive days.

RESULTS: A Food Index and a Shock Index were developed which measured how cooperatively each individual rat obtained food and avoided shock respectively. The mean of these two indices constituted the Cooperation Index. All three of these indices have mathematical limits of from 0–100. The experimentally obtained values ranged from 18.18–99.58 for Food; 0.00–97.09 for Shock, and 12.12–96.12 for the Cooperation Index.

CONCLUSIONS: In a social situation in which animals may obtain food either cooperatively or uncooperatively we find (1) the situation is a relatively pure one, e.g., other forms of social behavior do not appear to a significant enough degree to introduce artifacts in the results. (2) The various indices of social behavior have the nature of scientific conventions which supply readily quantifiable variables in terms of which cooperation may be analyzed. (3) The most complete and accurate description of cooperation came from a quantitative and detailed analysis of the specific responses of individual organisms in the cooperation box.

9:05 A.M. The Relation of Secondary Reinforcement to Delayed Reward in Visual Discrimination Learning. *G. Robert Grice, Brown University.* (74)

PROBLEM: The problem was to test, in a visual discrimination situation, the hypothesis that learning with delayed reward is the result of immediate secondary reinforcement, and to study delayed reward learning with secondary reinforcement reduced to a minimum.

POPULATION: The subjects were 75 naive, female albino rats.

PROCEDURE: Groups were run on a black-white discrimination problem with delays of 0, 0.5, 1.2, 2, 5, and 10 seconds. A second 5 second group was fed in a goal box the same color as the positive stimulus, and a third was forced to make different motor responses to the two stimuli.

RESULTS: A very steep delay of reinforcement function was obtained. It fell rapidly during the first second and was at a near-zero level in ten seconds. The groups which ate in the goal box of the same color as the positive stimulus, and the group which made characteristically different responses to the black and white stimuli both learned significantly faster than the five second control group.

CONCLUSIONS: The data are consistent with a theory which assumes no "primary" delay of reinforcement gradient, but accounts for delayed reward learning in terms of immediate secondary reinforcement. Such secondary reinforcement may be accomplished by proprioceptive stimulation resulting from the response and continuing until the moment of the reward. The proprioceptive pattern accompanying the response acts as a secondary reinforcing agent by virtue of its similarity to the traces which on previous trials have lasted until the reward.

9:20 A.M. The Effect of a Various Number of Reinforcements in a T-Maze upon Spatial Learning in the White Rat. *Howard H. Kendler, University of Colorado.* (75)

PROBLEM: The purpose of the present investigation was to determine the influence various number of reinforcements, in a free choice T-maze situation, has upon the amount of spatial learning.

POPULATION: Forty-eight male albino rats, of the Wistar strain, whose ages ranged from 60 to 90 days, were utilized as subjects.

PROCEDURE: The problem confronting the subjects during the preliminary training was to choose the side leading to food in an enclosed T-maze, with a 150 watt diffused light above the choice point. The population was divided into four groups, receiving respectively 0, 5, 20 and 100 reinforcements following their correct responses. During the 20 test trials the route to the choice point was blocked, and the animals had a choice of one of six possible pathways radiating symmetrically at angles of 31, 62 and 90 degrees from the new choice point. One of the

62 degree pathways led directly to the goal box which contained the reward during preliminary training, and the response to this pathway was the only one rewarded during the test series.

RESULTS: In the initial test trial only two animals (one each in Group 5 and 20) of the 48 chose the alley leading directly to the food while the mode response was to the "90 degree" alley which coincided with the right or left turning response which had been rewarded during preliminary training. During the 20 trials of the test series, Groups 0, 5, 20 and 100 had means of 2.50, 3.64, 5.08 and 3.30 correct responses, respectively. One of these differences (Groups 0 and 20) was significant at the 1% level, one (Groups 20 and 100) at the 5% level, and three were significant at the 20% level.

CONCLUSIONS: The results of the first test trial is at variance with those of the initial study of Tolman, Ritchie and Kalish but several important methodological differences (enclosed T-maze, illumination at the choice point of the preliminary training, etc.) can probably account for this divergence. The results suggest a need for greater experimental specifications of the variables underlying spatial learning, and indicate (1) that varying number of reinforcements has a differential effect upon spatial learning, and (2) that spatial learning increases with greater number of reinforcements up to 20 but decreases at 100 reinforcements. The present results and those of the California studies are discussed in terms of the meanings of the concepts "response" and "sign-gestalt-expectations," and from the general theoretical viewpoints of Tolman and Hull.

Acknowledgement is made to Mr. William P. Gasser who served as experimenter.

9:35 A.M. The Role of Effort in the Performance of a Distance Discrimination by Albino Rats. *Richard L. Solomon, Brown University.* (76)

PROBLEM: It has been shown that rats can acquire a distance discrimination on the basis of response-produced effects. It has been shown that the characteristic locomotion distance can be *increased* in such discriminations by increasing the level of positive motivation with long intervals of food deprivation. If we assume that one of the response-produced effects is negative motivation, and that such motivation is related to the effort requirements of responding, then it follows that increasing the effort requirement in a distance discrimination should *decrease* the characteristic locomotion distance.

PROCEDURE: Ten rats were trained in a distance discrimination in which they were required to traverse a constant distance on an elevated runway before they turned onto a side runway to obtain food. External cues were constantly scrambled to force the animals to depend on response-produced effects in making the discrimination. After a stable level of discrimination was attained, as evidenced by a stable locomotion distance, the rats were weighted down with a 60 gram load by means of a special saddle-pack harness arrangement. The locomotion distance was found to decrease with this increased effort requirement, evidenced by the fact that most of the animals stopped and turned nearer the starting point of the maze runway.

RESULTS: The results are thought to agree with two different conceptual schemes. Crutchfield has assumed that "psychological distance," as indicated by locomotion distance, is a function of "psychological need," a concept defined in his experiment by hours of food deprivation. We can assume that increased effort requirements, since they presumably produce more negative drive effects, act to decrease "psychological need." Or we can use peripheral constructs and argue that the rats were behaving on the basis of response-produced effects which serve as cues or conditioned stimuli; in this case the rats may be assumed to make the distance discrimination on the basis of cue intensity or drive stimulation intensity. The peripheral constructs are preferred, since they suggest independent physiological measurement.

PSYCHOLOGICAL TESTS

8:50 A.M., Thursday, September 11
Michigan Room, Hotel Statler
HERBERT S. CONRAD, Chairman

8:50 A.M. Differential Prediction of Scholastic Success. *Robert G. Bernreuter, Pennsylvania State College.* (77)

PROBLEM: To devise techniques for the prediction of scholastic success in the several college curricula, and a method of reporting results to staff and students.

POPULATION: Since 1939, all Freshmen at the Pennsylvania State College have been tested.

PROCEDURE: Various batteries of tests have been tried out. Several multiple correlation prediction formulas have been written for each of the major divisions of the college. Numerous report forms have been devised and used.

RESULTS: Prediction formulas have been selected for routine use which give coefficients of correlation varying from .55 to .80 with grade point average. An I.B.M. card has been devised which serves as an easily reproduced profile of results.

CONCLUSIONS: It is entirely feasible to develop and administer an inexpensive vocational guidance program for college freshmen based upon the differential prediction of success in the subdivisions of a university.

9:05 A.M. An Intelligence Test for Early Infancy. *A. R. Gilliland, Northwestern University.* (78)

PROBLEM: The construction, determination of validity and reliability, and standardization of an intelligence test for early infancy.

POPULATION: 200 infants from the Evanston Cradle. 30 non-institutional cases. 60 inmates of the Lincoln State School and Colony.

PROCEDURE: A test, previously described, has been revised and divided into three parts, 19 tests each for ages 4, 8, and 12 weeks. Validation was determined by age-grade progress and a comparison of the normal and feeble-minded groups. Some of the latter group have been and some of the former are being tested with Binet tests.

RESULTS: The reliability of the whole test was .86. Part I correlated .83 with Part II, Parts II and III .86, and Parts I and III .73. The validity of the test items was shown by definite age grade progress in normal children in 47 out of 57 items of the test. Test scores for feeble-minded children from one to five years of age were similar to normal infants four to twelve weeks of age. Binet test scores on these children, so far as they could be obtained, indicated similar retardation. Normal infants who have been retested with Binet tests show a close relationship with the infant test scores.

CONCLUSIONS: Results indicate that a test can be constructed which possesses relatively high reliability in measuring the intelligence of infants. Scores indicate that the test here described discriminates between normal and feeble-minded children. In addition to its usefulness for the study of mental growth and the influence of environmental influences on intelligence, such a test has a very practical value as an aid in the early placement of infants in foster homes.

9:20 A.M. An Item Analysis and Evaluation of the Merrill-Palmer Scale of Mental Tests for Preschool Children. *Dale B. Harris, University of Minnesota.* (79)

PROBLEM: To make an item analysis (item difficulty and discriminating power) of the Merrill-Palmer Scale of Mental Tests, preparatory to a possible revision and extension of the Merrill-Palmer Scale.

POPULATION: 700 tests selected from files of a growth study on approximately 500 children, according to defined criteria. All analyses are conducted for children sorted into three-month age groups.

PROCEDURE: Criteria were carefully defined for the handling of individual items, and are presented in the paper. The proportion of children in each age group passing each item was computed. For the three age groups close to a 50% passing criterion, the biserial correlation between pass-fail on a particular item, and total score on the Merrill-Palmer, less the contribution of the test material of the item being analyzed, were computed.

RESULTS: Results are reported on item validity in relation to total score on Merrill-Palmer to verbal, non-verbal, and total scales of the Minnesota Preschool test, and for available cases to Stanford Binet results taken between the ages of 5 and 12.

CONCLUSIONS: Certain conclusions are reached as to the relative contributions of present Merrill-Palmer items to a possible revision and extension of the Merrill-Palmer Scale.

9:35 A.M. A Critical Examination of the Concept of "Accident-Proneness" as Applied to Aircraft Pilots. *Richard H. Henneman and Philip H. Mitchell, Headquarters, AAF Strategic Air Command.* (80)

Aircraft accident research inevitably raises the question of "accident-proneness" among pilots. Analysis of this subject reveals four problems, namely, (1) *definition*, (2) *identification*, (3) *advance prediction*, (4) *remedy*.

A review of previous accident investigation (both within and beyond the field of aviation) leads to the following conclusions:

1. The only safe definition of "accident-proneness" is based upon the relative frequency of accidents; definition in terms of inherent qualities within the individual has been suggested, and is widely accepted, but not *proven*.

2. Although identifying traits of "accident-prone" individuals have been proposed by various investigators, the incidence and reliability of such traits have not as yet been adequately established.

3. Suggested tests for the prediction of "accident-proneness" present a confused picture. Validities are not particularly high nor are the measured traits clearly specified in most cases.

The principal methods of coping with accident-repeater pilots are: (1) improved selection; (2) retraining; (3) permanent grounding; (4) clinical treatment; (5) redesign of equipment; (6) stricter enforcement of safety regulations. The lack of dependable means of identification and advance prediction of "accident-proneness" imposes serious restrictions upon *selection* procedures; it also places in doubt the value of *clinical treatment*. *Redesign of equipment* has already proven its value in reducing accidents; so also has *retraining*. In military aviation it is further probable that *stricter enforcement of safety regulations* may effect some reduction in aircraft accidents. *Permanent grounding* should be resorted to only if identification of "accident-proneness" has been unmistakably established.

ANIMAL LEARNING II

10:00 A.M., Thursday, September 11

Banquet Room, Hotel Statler

EDWARD C. TOLMAN, Chairman

10:00 A.M. Experiments on the Strength of Acquired Drive Based on Hunger. *Neal E. Miller, Yale University.* (81)

PROBLEM: (A) To compare the strength of acquired drive based on 22 hour hunger with that based on different strengths of electric shock; and (B) to study the way in which acquired drive based on hunger is affected by introducing during learning (1) frustrating delays, and (2) increases in length of alley.

POPULATION: (A) 87 male albino rats 60 days old. (B) 60 male albino rats 60 days old.

PROCEDURE: (A) One group of satiated animals trained to run from white into black compartment to escape electric shock and another group of hungry animals trained to perform similar habit to secure food. Both groups tested without primary drive of electric shock or hunger and measured on (1) persistence of original habit and (2) learning of new habit. (B) Hungry animals trained to run down short black alley through door into white food box. During training following conditions introduced for different groups: (1) variable delays at door, (2) additional length of run after door, (3) no delays or additional lengths of run. After training all animals tested without hunger under condition (3) to determine number of trials they continued to run without primary drive.

RESULTS: (A) During the first test trials without primary drive the animals that had been trained on hunger extinguished far more rapidly than those that had received moderately strong electric shocks. During the second set of test trials without primary drive, the animals that had been trained on hunger did not learn the new habit while those trained on moderately strong shocks did. (B) The hunger animals with frustrating delay introduced into their training continued to run for more trials during their satiation tests than those trained under the other two conditions.

CONCLUSIONS: (A) In a simple situation, training with moderately strong electric shocks produced a much stronger acquired drive than training with a 22 hour hunger drive which was superimposed on a general reduction of diet. (B) Increasing the complexity of the situation by introducing frustrating delays increased the strength of acquired drive based on hunger but increasing the length of distance the animals had to run did not.

10:15 A.M. The Role of an Irrelevant Drive in Response Evocation in the White Rat. *Wilse B. Webb, State University of Iowa.* (82)

PROBLEM: This experiment was designed to determine the role of an irrelevant drive in the evocation of a learned response when the relevant drive under which the response tendency was developed had been satiated. An irrelevant drive is here defined as a drive which has not been reduced by the particular response being measured.

POPULATION: Eighty albino rats were randomized among five groups which are defined by the motivational conditions outlined below. In each group there were ten male animals and six female animals.

PROCEDURE: All animals were trained to open a door to obtain a pellet of food. Each animal was given 30 trials a day for three days. The motivation during acquisition for all groups was 22-hours of food deprivation and 0-hours of water deprivation.

After training, the animals were divided into the following five groups:

Group I: Satiated for food and water immediately prior to extinction.

Group II: Satiated for water three hours prior to extinction and satiated for food immediately prior to extinction.

Group III: Satiated for water 12-hours prior to extinction and satiated for food immediately prior to extinction.

Group IV: Satiated for water 22-hours prior to extinction and satiated for food immediately prior to extinction.

Group V: Satiated for water immediately prior to extinction and satiated for food 22-hours prior to extinction.

The response tendency of door opening was extinguished for all groups. The criterion of extinction was no-response-in-a-three-minute-period.

RESULTS: An examination of extinction measures indicated that the presence of an irrelevant drive was effective in producing a response which had been developed under a different drive condition.

CONCLUSIONS: These data are interpreted as tending to support Hull's hypothesis concerning the role of an irrelevant drive in response evocation in terms of its contribution to a "generalized" drive state.

10:30 A.M. Transfer between Discriminations Involving the Same Cues but Different Responses. *Douglas H. Lawrence, Yale University.* (83)

PROBLEM: The present experiment explores the possibility that learning to discriminate two stimuli, black and white, in one situation facilitates the learning of a second

habit to those stimuli even though the responses in the two situations are different. A design of this type minimizes the possibility of transfer in terms of the generalization of overt responses.

POPULATION: Two groups, ten animals in a group, of 90 day old albino rats were used in the first experiment. The results of this experiment were confirmed with a modified procedure on two other groups of 12 animals each.

PROCEDURE: Half the experimental group was trained with black positive and half with white positive on a conventional black-white discrimination apparatus. The positive cue was equally often on the right and left. The control group learned a discrimination of equivalent difficulty in which the cues were a rough versus smooth floor. Both groups were then trained on a second black-white discrimination problem. Whenever placed in an all black T-maze, the animal had to turn in one direction (e.g., right), and whenever placed in an all white T-maze, it had to turn in the opposite direction (e.g., left).

RESULTS: During the first ten trials on the T-mazes the experimental group averaged 2.6 errors, the control 4.6. This difference was significant at the 1% level of confidence. The mean difference tended to decrease during later trials.

CONCLUSIONS: The experimental design minimized the role of overt responses, orienting reactions, and position habits. The transfer effects, therefore, cannot readily be accounted for in terms of the generalization of overt responses. The experiment suggests that the original discrimination training established some mediating response, possibly akin to what is usually meant by "paying attention" to the relevant stimuli, that facilitated later learning.

10:45 A.M. Mazes Run Without Error on the First Trial. *Donald Snygg, Oswego, New York.* (84)

PROBLEM: To test the validity of the field differentiation theory of learning. If this concept is valid there should be a great deal of transfer between similar tasks in the early stages of learning before the details are differentiated and the tasks are recognized as distinct. It should be possible, for instance, for an animal to run new mazes without error on the first trial, even though the correct path is quite different in pattern from any he has previously run, if the new maze conforms to his existing concept of maze structure. S-R theories, on the other hand, would seem to imply that when the maze patterns and arrangement of specific stimuli differ on successive presentations errorless runs will occur only as a result of chance.

PROCEDURE: A series of multiple unit mazes was created by interchanging the food and starting boxes of a ten section Warden U maze and rearranging the units to form a different maze pattern for each run. If the field differentiation concept is valid rats should be able to run any of the series of unfamiliar patterns without error as soon as they have differentiated the general direction toward the foodbox. This should occur very early in the series.

RESULTS: Of the eight white rats run in this series of mazes, three made errorless runs as early as the third maze and six made errorless runs in the fourth. In mazes 4, 5, 6, 7, and 8 three animals ran all five mazes without error, three ran four of the five without error, one ran three without error and the other, two. Of the 400 choices made in these mazes, 390 were correct.

CONCLUSIONS: The ability of the subjects to run new maze patterns without error on the first trial, as predicted, seems to support the phenomenological field theory on which the prediction was based. The results also indicate a need for revising the traditional concepts of generalization and transfer of training.

PSYCHOMETRIC SOCIETY

10:00 A.M., Thursday, September 11

Michigan Room, Hotel Statler

L. L. THURSTONE, Chairman

10:00 A.M. Factorial Investigation of the Perceptual-Speed Factor. *Harold P. Bechtoldt, State University of Iowa.* (85)

PROBLEM: This study was designed to investigate the hypothesis that the perceptual-speed factor is a complex of two or more linearly independent parameters. Two hypotheses as to the nature of these components were studied.

POPULATION: 167 volunteers were secured from University of Chicago classes. The sample included 108 men and 59 women, ranging in age from 17 to 28 years and in education from the freshman to first-year graduate level.

PROCEDURE: A battery of 44 tests was administered in five one-hour sessions. The product-moment intercorrelations of 49 variables were analyzed to 13 factors by Thurstone's multiple-group method of factor analysis. The correlations of the primaries in the oblique simple structure were computed and used to determine five second-order factors.

RESULTS: Eleven nonresidual first-order factors appeared for which interpretations were suggested. The study confirmed the existence of Factors N, S, V, W, and F, reported in previous investigations. Four perceptual-

speed factors appeared. One was restricted to choice-discrimination tasks, as previously reported; another, to a facility with predetermined symbols; a third to facility in associational recognition; the interpretation of the fourth perceptual factor was not clear. Two other factors appeared which were interpreted as a facility in restructuring perceptual material and as a facility in organizing simultaneously-presented configurations under the distraction of further activity. A motor speed factor was also found.

Of the five second-order factors, two doublet factors were tentatively interpreted as speed of closure and as fluency of writing, respectively. The other three factors were interpreted as, first, speed in restricted or repetitive tasks, second, facility with associational materials, and, third, facility in manipulating formal visual configurations.

CONCLUSIONS: 1. Additional evidence of the invariance of factorial results was obtained.

2. The hypothesis as to the complexity of the perceptual-speed domain was sustained. Three linearly-independent perceptual factors were found with the paper-and-pencil tests, and a fourth with the simple choice-discrimination tasks. A second-order speed factor was interpreted as one of the common elements in the perceptual-speed factor, as previously discussed.

3. Three second-order factors were isolated which, if sustained by further investigation, should prove to be of considerable psychological interest.

4. The effect of changes in the form of the task or in the method of presentation upon the factorial composition of a test requires continued study.

10:15 A.M. The Prediction of Categories from Measurements. *J. P. Guilford, University of Southern California.* (86)

Equations are proposed whereby predictions can be made as to which of two categories individuals probably belong, knowing their scores on a continuous variable. The equations yield cutting scores on the continuous variable which minimize errors of prediction of the categories.

The data that must be known for application of the equations include: (1) the proportions of individuals in each category; (2) the mean of the combined groups on the continuous variable; (3) the difference between means of individuals in the two groups; and (4) the total variance of the combined group.

The assumptions are that (1) the two categories may be given the values of 0 and 1; (2) the critical division point is a predicted category value of .5; (3) the predicted variable may be either a genuine or an artificial dichotomy if point biserial and biserial correlations, respectively, are used.

The proposed equations have a direct relation to Fisher's discriminant function and the principles apply to multiple prediction as well as to two-variable problems. A number of implications can be drawn from the equations for problems of selection of personnel.

10:30 A.M. The Analysis of Qualitative Variables. *Clyde H. Coombs, University of Michigan.* (87)

Potentially any mental ability test, personality questionnaire, neurotic or adjustment inventory, or attitude questionnaire could be made to yield five scores. Two of these are the conventional scores usually obtained—the individual's status score and the group's status score. The other three scores are derivatives of the dispersion within the individual and between individuals. They are indices of the extent to which a trait exists as a functional unity in general (the trait score); the extent to which there is integration, rigidity, conformity, or maturity of the trait in the individual (the individual's dispersion score); and the extent to which there is organization, cohesion, or uniformity within the group (the group dispersion score). The particular significance or interpretation of these scores is dependent upon the nature of the psychological trait in question. The explanation of integration or lack of it may be in terms of maturity, conflict or uniformity of social forces, standardization of education, or other dynamics.

10:45 A.M. Compensations for Subjects' Response-Bias in a Measure of Temperament. *Doncaster G. Humm and Kathryn A. Humm, Los Angeles, California.* (88)

PROBLEM: The measurement of various degrees of over-response and under-response to a measure of temperament and the setting up of formulas and tables to compensate for these tendencies.

POPULATION: 750 cases, employees and applicants for employment tested by the employer. 300 applicants for vocational and personal guidance. 181 cases of whom life history studies were made for comparison with test results. 1264 employees tested in a survey of the entire existing force of a corporation.

PROCEDURE: (1) Discovery of two measures of response-bias and statistical study of these measures. (2) Employment of one standard regression formula and the invention of a new regression formula to compensate for response-bias. (3) Construction of a multiple-staffed nomograph for convenient calculation of compensations. (4) Study of the relationships of the two measures of

response-bias leading to provision of an additional procedure of treating it.

RESULTS: The proportion of tests rejected for response-bias have been reduced from approximately thirty per cent to less than five per cent.

CONCLUSIONS: Response-bias is an important factor in the measurement of temperament. The inclusion of compensations for response-bias has greatly improved the test under consideration.

11:00 A.M. Factor Analyses of Qualitative Attributes. *Paul F. Lazarsfeld, Bureau of Applied Social Research.* (89)

In tests and opinion questionnaires, each single item is often a dichotomy: the respondents have to give a true-false, a yes-no, or a similar kind of alternative answer. If we have s such items they can be interrelated by $\frac{s(s-1)}{2}$ four-fold tables; but if we want to describe the degree of interrelationship expressed by each of these four-fold tables, we have to make an arbitrary decision, using either tetrachoric r, or a point correlation, or another of the measurements suggested in the literature.

Once a measure of interrelationship is chosen, we can enter the numerical values in a correlation matrix and proceed with the mechanics of factor analysis. But it is well known that the factor pattern depends upon what measure we choose. This is obviously most unsatisfactory. The present paper suggests an approach which circumvents this difficulty.

The basic idea derives from the notion of a latent attribute. To explain it, we deal first with three dichotomies only. It can then be shown that one can derive a fourth hypothetical dichotomy which has the following characteristics. If the sample of respondents is divided by this fourth dichotomy into two groups, then for each group the interrelationships between the three manifest items vanish. Or, in other words, the latent attribute accounts completely for the existing manifest interrelationships. In deriving the necessary formula no measure of correlation has to be chosen. The only distinction necessary is whether the four-fold tables do or do not show an interrelationship. A vanishing interrelationship is identical with a vanishing cross product in the four-fold table and the choice of a specific correlation measure is not necessary.

If we are dealing with more than three dichotomies there doesn't, in general, exist a latent attribute. But it is possible to derive a set of simple algebraic conditions; if these conditions are fulfilled, a latent attribute exists. The paper shows that one of these conditions has interesting parallels to the Spearman tetrad conditions. The other conditions bring out clearly the difference between a Spearman general factor and a latent attribute.

If a latent attribute exists, a score metric can be derived. Each response pattern has a specific value: the probability that the people giving just this pattern of answers have the latent attribute also.

Actual examples are given showing that a variety of tests and questionnaires approximate the case of perfect "reducibility to one latent attribute." But in actual cases, of course, the conditions are never perfectly fulfilled. Therefore, the best estimate of the score has to be made. The necessary computing procedures are presented.

At the end of the paper, the extension of the theory to several latent attributes will be sketched and its relation to multiple factor analyses will be indicated.

SYMPOSIUM: CURRENT VIEWS AND PRACTICES IN CHILD THERAPY

Sponsored by the Division of Clinical and Abnormal Psychology

10:00 A.M., Thursday, September 11

Crystal Ballroom, Hotel Book-Cadillac

ROBERT YOUNG, Chairman

SYMPOSIUM: CURRENT ACTIVITIES IN MILITARY RESEARCH

Sponsored by the Division of Military Psychology

10:00 A.M., Thursday, September 11

Italian Garden, Hotel Book-Cadillac

Current psychological research programs of military organizations will be reported upon by psychologists working in these activities. Emphasis will be on the nature of the research problems and the character and scope of the research activities rather than on the actual results which have been obtained.

ARTHUR W. MELTON, Chairman

Participants: LEONARD C. MEAD, FRANKLIN V. TAYLOR, ANTHONY C. TUCKER, C. D. LEATHERMAN, HARRY G. OLDER, JAMES G. MILLER, MERRILL F. ROFF, JOHN W. MACMILLAN, DONALD G. MARQUIS, ALPHONSE CHAPANIS, EDWIN R. HENRY, and GLEN FINCH.

LEARNING I

Program arranged by the Division of Physiological and Comparative Psychology

11:10 A.M., Thursday, September 11

Banquet Room, Hotel Statler

KENNETH W. SPENCE, Chairman

11:10 A.M. The Effects of Early Experience on Problem Solving at Maturity. *D. O. Hebb, McGill University.* (90)

PROBLEM: This study was an exploratory search for the effects of early experience on learning and problem-solving at maturity, using two methods: (A) sense-privation—comparing animals blinded at birth with others blinded at maturity; and (B) limitation of the environment—comparing animals reared to maturity in cages with others which were allowed frequent exploration of a varied environment.

POPULATION: (A) Seven rats with eyes removed as soon as they opened, 7 blinded at maturity—2 split litters, environmental conditions the same for both groups. (B) Twenty-five normal rats reared in laboratory cages, 7 rats reared at home as pets with much of their time spent outside their cages.

PROCEDURE: Two kinds of datum were obtained, from a "learning" method and a "test" method. The "learning" data were error scores from prolonged training on two tasks for mastery of which 200 trials or more is necessary. The "test" method (Hebb and Williams, 1946) used a large number of easier tasks in which clear-cut solutions by seeing animals often appear as early as the second or third trial, or even on the first. This is problem-solving as contrasted with rote learning. The method as modified here had a test-retest reliability of .84.

RESULTS: (A) The two blind groups were tested with both "learning" and "test" methods. In the learning scores, there was a slight and not significant superiority of late-blinded over early-blinded rats. With the test method, however, a reliable superiority of the late-blinded was found. (B) With the normal cage-reared and pet groups, only the test method was used. There was again a definite (though not as marked) superiority of the group with the greater infant experience. There is evidence to show clearly that the superiority of the pet group was not a motivational or taming effect.

CONCLUSIONS: 1. There is a lasting effect of infant experience on the problem-solving of the adult rat. 2. This difference may not be detectable in rote learning scores, but appears when a method is used that is more like a human intelligence test: that is, with an index based on a large number of problems which some normal animals solve promptly.

11:25 A.M. Visual Discriminations by Chimpanzees after Rearing in Darkness. *Austin H. Riesen, Yerkes Laboratories of Primate Biology.* (91)

PROBLEM: To determine the course of first visual learning in primates with specific reference to the relative efficacy of color, size, direction of line, and shape, in the early visual discrimination.

POPULATION: Two chimpanzees reared in darkness and found by thorough preliminary tests to be virtually "blind" at the age of 20 months, except for reflex responses to light.

PROCEDURE: The first step in training established an avoidance of a large disc with vertical yellow and black stripes. Other plaques differing either in size, color, direction of stripes, or shape were then presented and always followed by reward. Shock continued to be given with the training disc.

RESULTS: In the initial training avoidance of the shock plaque appeared very slowly (in comparison with normal animals). In the test period there was no discrimination of rewarded from shock plaques for a large number of trials. As the training and tests continued, discrimination of size and color appeared first, of direction of line next, and shape of the whole stimulus object last.

CONCLUSIONS: 1. The first visual learning of chimpanzees is slow.

2. The first discrimination appears to be of size, color and presumably intensity.

3. Form discrimination is delayed, and appears only following prolonged visual experience.

4. These results confirm the findings reported by Senden for man following removal of congenital cataract, and indicate that there is little form perception in the first vision of higher primates.

11:40 A.M. An Experimental Test of the Dynamic Character of Expectancy. *R. H. Waters, University of Arkansas.* (92)

PROBLEM: Both Thorndike and Guthrie have criticized Tolman's concept of expectancy on the grounds of its being a static concept without influence on the animal's behavior. The problem of the present paper was to test the hypothesis that expectancy is not a mere static construct but a dynamic one that does exert a directive or controlling power in behavior.

POPULATION: Fifty three albino rats divided into three groups of 15, 15 and 23 were carried through three different experimental settings respectively.

PROCEDURE: The procedure was adapted from one proposed by Thorndike. It consisted in carrying the animals in the hand first to one box containing food and to another containing no food. These trips alternated during a ten-trial period per day for two days. On the third or critical test day the animals were placed on the table and allowed a free choice of either box. Three different experimental settings were devised within this general experimental design.

RESULTS: Results in terms of choices of box containing food, a quantitative measure, and in terms of the animals behavior, a qualitative measure, indicate that expectancy was developed and did operate in determining the choice behavior on the critical test runs.

CONCLUSIONS: The conclusion indicated by the experi-

mental results is that expectancy is a dynamic and not a static construct, that expectancy does operate as a factor influencing the direction and character of behavior.

11:55 A.M. Motor Components of Responses to Auditory Stimuli: The Relation of Stimulus Intensity and Instructions to Respond. *R. C. Davis, Indiana University.* (93)

PROBLEM: Previously it had been shown that auditory stimuli, at least in a certain range, produce related muscular responses. Here the question is how their responses are affected by instructing S to make a voluntary response at the conclusion of the stimulus.

POPULATION: 24 students arranged in Latin square designs to show effect of instructions to respond, stimulus intensity, adaptation and stimulus order.

PROCEDURE: Muscle action potentials, integrated over each 1/10 second were recorded from extensor muscles in the forearms while auditory stimuli of 3 intensities, 2 seconds in duration, were presented various rotations. For half the presentations S was instructed to respond with a finger movement, for the other half not to respond.

RESULTS: It is convenient to describe the results with reference to an a-response, in the first 4 second, a b-response in the second second, and to the pre-stimulus level. The following results appear:

1. Instructions to respond raise the pre-stimulus tension level in the arm (right) designated to make the voluntary response.

2. Both with and without instructions to respond, the a- and b-reactions are functions of stimulus intensity.

3. Instructions to respond increase the a- and b-responses in the right arm to all stimulus intensities, the b response being probably more affected.

4. The effect of instructions is greater when the stimuli are stronger.

CONCLUSIONS: Giving subjects instructions to respond probably adds no new motor component to reactions to auditory stimuli, but modifies those already present without such instructions. The motor response is more differentiated with reference to stimuli when such instructions are given.

LEARNING II

1:40 P.M., Thursday, September 11

Banquet Room, Hotel Statler

DAVID A. GRANT, Chairman

1:40 P.M. Detour Experiments in Rats. *Paul H. Schiller, Columbia University and Yerkes Laboratories of Primate Biology.* (94)

PROBLEM: Can female rats find their young if separated from them by a gap, a partition wall, or several obstacles, by using a roundabout path that is regularly varied in every subsequent run?

POPULATION: Six female white rats in the period of lactation and after were used, each given about 250 different trials.

PROCEDURE: Five basic types of problems were used: (1) the multiple bridge, (2) the combined partition, (3) the elevated circuit way, (4) chain pulling across glass walls, and (5) across ditches—all permitting 20-80 variations. Never was the same arrangement repeated, except, sometimes, in a spatial mirror-constellation.

RESULTS: After habituation to goal-running, gradually built-up problems were solved with growing ease, in a smooth, well-shaped run (Kohler) with decreasing VTE (Tolman). Beyond a certain level of task-complication only 2 of the 6 animals managed uninterrupted runs that could be regarded as solutions. These animals, defined as "bright," displayed this kind of behavior in all five types of problems.

CONCLUSIONS: Detour behavior is ascribed neither to insight nor to conditioning. A primary response to the young, litter, or food, is initiated in some incipient way to any outstanding objects like edges, walls, stands, steps, tubes, chains, and the like. These incipient responses become, in the course of learning, by transfer, connected into larger units, the transition between the components of which are smoothed or rounded off by some anticipatory interaction, thus giving the impression of a coherent whole, an apparently insightful run.

1:55 P.M. A Determination of Empirical Constants in Rotary Pursuit Performance. *R. B. Ammons, University of Denver.* (95)

PROBLEM: At a previous meeting of this association, a system of operationally defined concepts and some postulates to relate them were proposed to account for certain phenomena in rotary pursuit performance. This paper reports the results of an experiment to obtain several of the empirical constants necessary for actual quantitative prediction within this system.

POPULATION & PROCEDURE: Data were obtained from a group of 510 undergraduate women students who were given $\frac{1}{3}$, 1, 3, 8, or 17 minutes of continuous practice on rotary pursuit apparatus, then were allowed rests of $\frac{1}{3}$, 2, 5, 10, 20, 60, or 360 minutes, followed by 8 more minutes of continuous practice. Analysis of the data was made to determine the effects of duration of pre-rest practice and length of interpolated rest on reminiscence, temporary work decrement (Dwt), and warm-up decrement.

RESULTS: The results can be summarized briefly as follows: (1) Reminiscence reaches a maximum after

5 minutes of rest following 8 minutes of continuous practice. (2) The amount of temporary work decrement dissipated over varying lengths of rest is fairly well expressed by the exponential equation $D_{Wt} = 23(1 - 10^{-22N})$ where N equals minutes of rest after pre-rest practice. (3) Initial amount of warm-up decrement appears to be an increasing negatively accelerated function of the duration of pre-rest practice and duration of interpolated rest.

CONCLUSIONS: These findings make possible the prediction of a wide range of distribution of practice phenomena which are easily testable on rotary pursuit apparatus and appear to be of potential value to the learning theorist.

2:10 P.M. Similarity, Goal Gradient, and Interference in Maze Learning. *Leonard S. Kogan, University of Rochester.* (96)

PROBLEM: Retroactive interference of interpolated maze patterns with the retention and relearning of originally learned maze patterns as a function of number of antagonistic elements and proximity of antagonistic elements to goal.

POPULATION: 128 albino rats: 64 males, 64 females. Eight major subgroups distributed randomly in complete factorial design.

PROCEDURE: Standard retroactive inhibition experiment using a 3 choice-point unidirectional maze. Data consist of time and error scores for each of 3 successive identical units. Interpolated learning is varied systematically from original learning by reversing 1, 2, or 3 choice points. Analysis is based on comparison of scores of experimental and control groups as a function of (1) number of reversed choice points in original and interpolated patterns and (2) distance of reversed choice points from goal.

RESULTS: Interference of an interpolated pattern with the retention and relearning of an original maze pattern is demonstrated. This interference is "specific" being largely limited to the units where choice points have been reversed. Choice points which are not reversed suffer no decrement but probability of correct response at these points increases steadily. Total amount of interference is directly related to the number of reversed units in the original and interpolated patterns. Evidence indicates that more interference occurs at choice points further from the goal box.

CONCLUSIONS: A habit sequence such as present in maze learning is not wholly disrupted by introduction of antagonistic responses into any of its component parts. Total interference is a direct function of the number of antagonistic responses introduced. The amount of interference is probably a function of the goal gradient with choice responses nearest the goal being learned, unlearned, and relearned most rapidly.

2:25 P.M. The Alteration at the Initiating Stimulus by the Response as a Learning Mechanism. I. Its Operation in Instrumental Finger Conditioning. *Delos D. Wickens, Ohio State University.* (97)

PROBLEM: Are stimulus-response connections determined by the fact that the response alters the stimulus?

POPULATION: 48 students in the elementary psychology classes at Ohio State University served as subjects.

PROCEDURE: Two groups of subjects were employed in a finger conditioning experiment. For the experimental group, the occurrence of the response terminated the *conditioned* stimulus. For the control, the conditioned stimulus was terminated by the timing device at the termination of the unconditioned stimulus. 65 paired stimulations were given, followed by 15 extinction trials and 10 trials in which the subjects were told to inhibit their conditioned responses.

RESULTS: (1) The rate of learning was reliably more rapid for the experimental group than for the control.
(2) Both groups attained the same final level of performance.
(3) There was no evidence of difference in extinction rate.
(4) A trend was present for the control group to give more conditioned responses in the inhibition series than the experimental.

CONCLUSIONS: The results of the experiment offer some evidence in support of the Guthrie hypothesis that S-R connections are determined by the fact that the response serves to alter the initiating stimulus and thus to prevent other "incorrect" and incompatible responses from becoming attached to it.

TEST CONSTRUCTION TECHNIQUE

1:40 P.M., Thursday, September 11
Michigan Room, Hotel Statler
DOROTHY ADKINS, Chairman

1:40 P.M. The Influence of the Procedure of Judging on the Halo Effect. *Alberta S. Cilinsky, Tufts College.* (98)

PROBLEM: Among various safeguards against the halo effect, Symonds proposed that all persons be rated for one trait at a time. By manipulating the procedure of judging, the present experiment attempts to put Symonds' suggestion to the test—and to secure evidence concerning the conditions under which the halo effect operates.

POPULATION: Twenty undergraduates enrolled in a course in Experimental Psychology served as subjects.

PROCEDURE: Using the graphic rating scale method, 10 slides taken from photographs of mature male faces were judged on the basis of general impression and 2 specific traits, honesty and courtesy. In Condition A, S was asked to rate each slide on all 3 qualities at a single presentation; in Condition B, only one rating was secured at any one presentation of a slide. These conditions were rotated in ABBA temporal order in each of 2 replications yielding 2 judgments per S on each quality rated under each condition.

RESULTS: The mean rating in mm. units was determined for each dimension judged for every slide and every S separately. In order to study the interrelations of the judgments under the two conditions, product-moment correlation coefficients between pairs of these mean ratings were calculated. Taking the size of the correlation as an index of the amount of the halo effect, a comparison of the three pairs of correlations obtained under the two conditions for each S shows that the procedure in Condition A is more conducive to the operation of the halo effect. Transmutation of the individual correlations into Fisher Z-scores yields a mean difference between conditions significant at the .01 level of confidence.

CONCLUSIONS: A comparison of the correlations between ratings of personality traits obtained under the procedure of judging all persons for one trait at a time with those obtained by judging several traits at a time confirms Symonds' prediction. The halo effect is demonstrably reduced by judging all persons for one trait at a time.

1:55 P.M. Consistency of Descriptive Personality Phrases in the Forced Choice Technique. *Stanley C. Markey, Personnel Research Section, AGO.* (99)

PROBLEM: To determine the consistency of indices, representing (1) frequency of choice and (2) discrimination between good and poor officers, evaluating descriptive phrases in a forced choice rating technique.

POPULATION: Three hundred fifty descriptive personality phrases, both desirable and undesirable, were combined in sets of four (tetrads) and used in several evaluation and efficiency reports. As many as 5,000 cases were compiled on many of the items.

PROCEDURE: Raters (immediate superiors, co-workers, and subordinates) were required to select one of the four phrases as most descriptive of the officer being rated and another as least descriptive. The efficiency of the officer was also evaluated by outside criteria. Item analyses of each form were made at various levels of efficiency established by outside criteria. Preference indices (percentage of frequency of choice) and discrimination indices (choice for high group minus choice for low group divided by total frequency of choice of high, middle, and low groups) were computed for each phrase in every item in all the various forms.

RESULTS: For the 100 or more phrases in which as many as 5,000 cases were available, a large percentage maintained consistent preference and discrimination indices despite the fact that they were used in various tetrads, with several other groups of three phrases. A predetermined key, based on an item analysis of tetrads used in one form, agreed almost 80 per cent with a key established from an item analysis of a second form, even though the items were used in different combinations in the second form.

CONCLUSIONS: Using the forced choice technique, the action of descriptive personality phrases in a set of four traits, properly matched in discrimination and preference values, can be predicted with a large degree of certainty. Consequently, the use of the forced choice technique gives promise of being one of the most reliable as well as highly valid methods in use for efficiency rating.

2:10 P.M. Techniques for Estimating the Optional Weight of the "Wrongs" in Scoring Printed Tests. *John T. Dailey, San Antonio, Texas.* (100)

PROBLEM: Previous investigations have demonstrated that test validity will be maximized when the "Rights" and "Wrongs" are combined according to their regression weights. This procedure is very time-consuming and laborious and is inadequate where a test must predict several criteria. This report presents a short-cut method of obtaining an approximation to optimal scoring formulas without waiting for criterion data to mature and is applicable to the prediction of multiple criteria.

POPULATION: AAF aviation cadets or basic trainees.

PROCEDURES: 1. The optimal weight for the wrongs depends upon: (a) the relative variability of the "Rights" and "Wrongs" scores ($\sigma R/\sigma W$), (b) the correlation between the "Rights" and "Wrongs" (r_{RW}), and (c) the relative validities of the "Rights" and "Wrongs" (r_{CW}/r_{CR}). Optimal weights for the "Wrongs" were computed for each test. The optimal validity was computed and compared with the validity of the "Rights" alone. 2. A simple formula was developed for estimating the optimal multiplier for the "Wrongs" in advance of the determination of the relative validities of the "Rights" and "Wrongs".

RESULTS: 1. Obtained optimal weights for the "Wrongs" for various tests ranged from plus .5 to minus 3.3. The optimally combined scores were from .03 to .06 more valid than were the "Rights" alone. 2. A good approximation to the optimal weight for the "Wrongs" may be obtained by using the obtained standard deviations and correlation between the "Rights" and

"Wrongs" and a rough estimate of the relative validities of the "Rights" and "Wrongs". This relative validity may be accurately enough estimated from the correlation between the "Rights" and "Wrongs" to give a fairly close estimate of the optimal weight for the wrongs. The loss in validity caused by using estimated scoring formulas was determined and found to be negligible. CONCLUSIONS: 1. Power tests with few or no omitted items may be scored "Rights" only, with considerable saving in scoring labor and little or no sacrifice in validity. 2. An appreciable gain in validity is possible by scoring speeded tests with the formula, R + aW ("a" being the optimal multiplier of the "Wrongs".) 3. An estimated optimal scoring formula derived from the known standard deviations and intercorrelation of "Rights" and "Wrongs" and a rough estimate of the ratio between the validity of the "Rights" and "Wrongs" gives a very good approximation to an optimal scoring formula derived from known values for all three variables involved.

2:25 P.M. How Effective are Subject Matter Specialists in Technical Test Construction? *Hyman Brandt, Personnel Research & Procedures Branch, ACO.* (101)

PROBLEM: What is the best possible procedure test technicians can employ in constructing objective, reliable and valid technical proficiency tests when confronted with the responsibility of building tests designed to measure competence in diverse specialties? Under such circumstances the use of subject matter specialists is imperative. The problem thus resolves itself into how these specialists *completely untrained or inexperienced in test construction* can be oriented and trained within a short time to plan tests and write items which satisfy the criteria of content and statistical validity.

POPULATION: Thousands of officers are to be integrated into the Regular Army as warrant officer specialists in many occupational fields involving ordnance, engineering, chemical warfare, communications, photography, weather, finance, law, supply, medicine, and aviation. The applicants may range in number from a dozen or so to several hundred depending on a specialty. These are scattered all over the world so that no prevalidation is practicable. For each specialty, the technical examination must be highly selective and indicative of job proficiency.

PROCEDURE: The subject matter experts were oriented with respect to planning the test and writing items. The planning phase was expanded to cover the preparation of a detailed job description (what he does), the preparation of a detailed outline of the entire specialty (complete 'know how' of the field), and the development of the scope of the examination (what he needs to know). The item writing phase stressed the principles of good item writing, the types of questions to be asked in terms of the test plan and the distribution of items of varied difficulty (simple recognition, application, reasoning, judgment) in accordance with the selection ratio desired. In addition to the orientation, the specialist was furnished job analyses, previous examination scores, and item analyses of previous tests if they were available. RESULTS: The above procedure produces valid technical proficiency tests. The data to be presented come from two sources: field reviews by other experts prior to use of the technical tests and item analyses of the tests subsequent to their use on groups for which they were devised. Field reviews of many of these examinations have revealed almost 100% agreement on the test plan and items. In many of the technical tests prepared by the subject matter experts for the 1944 U. S. Army warrant officer selection program, better than 90% valid items were obtained. The degree of orientation, supervision and review undertaken by the test technician was directly related to the percentage of valid items produced by the specialists.

CONCLUSIONS: The program outlined in this paper has demonstrated that reliable and valid technical proficiency tests can be constructed only when test technicians and subject matter specialists combine their respective talents. Experience has shown that when these specialists with *no* background in principles of measurement or test construction are trained to plan an examination in the manner described, they find little difficulty in turning out a variety of items which are subsequently shown to be satsfactorily valid. On the other hand, if there is no adequate direction, items prepared by such specialists are subsequently found to be of doubtful validity.

HUMAN LEARNING

2:50 P.M., Thursday, September 11

Banquet Room, Hotel Statler

HELEN PEAK, Chairman

2:50 P.M. An Attempt to Reconcile the "Unlearning" and Reproductive Inhibition Controversy. *B. R. Bugelski, University of Buffalo.* (102)

PROBLEM: Melton's Unlearning hypothesis as an explanation of retroactive inhibition depends upon the operation of an unknown factor "X". This study is an attempt to find a solution for the unknown "X".

POPULATION: 100 college students, beginners in Psychology, naive with respect to learning theory or nonsense syllable learning.

PROCEDURE: Subjects learned 10 successive lists of counterbalanced paired-associate nonsense syllables in rapid sequence under instructions that encouraged reporting intrusive errors. Learning conditions were designed for maximal proactive inhibition. Intrusive errors were traced to their sources.

RESULTS: The learning scores for the 10 successive lists followed an unusual, though expected, course, in that the odd numbered lists were learned better than the even numbered lists up to the ninth list. Failures to respond (presumably conflict) followed the reverse pattern. Intrusive errors were numerous and persisted from list to list, some intrusions in the last list coming from the first list learned. Intrusion from odd-numbered lists in the learning of the next lists outnumbered intrusions from even-numbered lists. Intra-list intrusions were more common in the odd-numbered lists than in the even-numbered lists.

CONCLUSIONS: 1. Proactive inhibition experiments have rarely been carried out over an extended series of learning sessions for observation of cumulative or serial effects. On two previous occasions it has been noted that odd-numbered lists have some advantage over even-numbered lists. The present experiment confirms this finding.

2. Although an "Unlearning" hypothesis is not contradicted (and is able to account for some of the findings) the nature, source, and frequency of the remote associations interfering with new learning favor a reproductive inhibition substitution (factor) for the unknown nature of the Unlearning or "X" factor.

3. Present results offer experimental demonstration of McGeoch's attempted hypothetical reconciliation of Unlearning and Reprod. Interference hypotheses.

3:05 P.M. Reminiscence in Motor Learning as a Function of the Length of Interpolated Rest. *G. A. Kimble, Brown University.* (103)

PROBLEM: According to Hull, reactive inhibition dissipates as a simple decay function of the amount of time allowed for rest after any effortful activity. The present experiment was designed to test this postulation for pursuit rotor learning.

POPULATION: A total of 93 subjects was used in the experiment. They were divided into six groups which differed in terms of the amount of rest allowed after original practice.

PROCEDURE: All subjects were given 10 50 sec. original practice trials on the pursuit rotor. These trials were separated by 10 sec. rest intervals. Following the original learning, the different groups were allowed different length rest periods and were then given two reminiscence trials. The rests used were 10 sec., 30 sec., 150 sec., 300 sec., 600 sec. and 1,200 sec.

RESULTS: Two measures of reminiscence were used; one was a gain measure, the other a measure in terms of post-rest performance. When either of these measures is plotted as a function of the length of interpolated rest, the result is a negatively accelerated curve which reaches an asymptote at approximately 10 min. Statistical evaluation of the results indicates that the differences among the various groups are reliable except in the case of the short rest groups and the two longest rest groups where an asymptote has been reached.

CONCLUSIONS: Hull's specific prediction is that the amount of reactive inhibition remaining after any particular amount of rest is given by the equation: ${}^{t}I_R = I_R \times 10^{-qt}$. From the gain measures of reminiscence used in the present experiment, indices of ${}^{t'''}I_R$ and a measure of I_R were obtained. The best-fitting decay function plotted through the points obtained from the empirical data has a decay constant (q) of $-.002$.

3:20 P.M. Rate of Recall as a Measure of Retention. *Leo Postman, Indiana University, and James P. Egan, University of Wisconsin.* (104)

PROBLEM: Conventional measures of memory, such as amount recalled and time scores, may not always gauge the full extent of retention. This experiment establishes *rate of recall* as a measure which differentiates among different degrees of human retention even when conventional indices fail to do so.

POPULATION: The subjects were 36 college students. All were volunteers and were assigned to the different experimental groups at random. The subjects were kept in ignorance of the purpose of the experiment.

PROCEDURE: The conventional paradigm for the measurement of retroactive inhibition was used. There were three groups of subjects. Original learning consisted of 18 nonsense syllables and four 3-digit numbers. Interpolated activities were: Group A, another list of 18 syllables and 4 numbers; Group B, 4 syllables and 18 numbers; Group C, light reading. Tests after OL and IL were by the method of free recall.

RESULTS: The number of items recalled in successive 3-sec. periods was recorded on both tests. The first recall test showed that the three groups were not significantly different. After interpolated activity Group A showed a small but significant loss in number of *syllables* recalled. Group B showed a similar loss for *digits*. Group C showed no significant decrements. All differences in *amount* retained were small. By measuring *rate of recall* these differences were confirmed and further differences among the conditions were established. For each group, rate of recall on the second test was compared with the rate on the first test. On

the second test, Group A had a slower rate for both syllables and digits than on the first; Group B had approximately the same rate for syllables but a strikingly lower rate for numbers; Group C had a faster rate for syllables (reminiscence) but the same rate for digits.

CONCLUSIONS: Rate of recall differentiates among different degrees of retention. This differentiation may appear even when there are no significant differences in the amount of material retained. *Rate of recall* measures recall as it proceeds in time, whereas *amount recalled* indicates only the end product of the process. For this reason rate is a more sensitive measure than amount. The present results extend to human rote learning a measure which has already been successfully applied to the operant behavior of lower organisms.

3:35 P.M. Spread of Effect in One-trial Learning in Relation to the Guessing-Sequence Hypothesis. *Donald W. Taylor, Stanford University.* (105)

Previous experiments concerned with the spread of effect have all involved giving several trials to learn, a procedure subject to methodological criticism. The present experiment employed one-trial learning. Each of about 8 lists of 25 adjectives was presented twice by means of a memory drum to each of 52 subjects. The subjects were instructed to respond to each word with any number between one and ten. On the first trial, the learning trial, two responses were arbitrarily called "right;" the others were all called "wrong." The serial position of the "right" responses was systematically varied. The number of responses repeated on the second trial, the recall trial, was tabulated both for the "right" responses and for the four responses preceding and the four responses following the "right" responses. A baseline was obtained by using the same procedure with a control group of 28 subjects with the exception that responses were neither rewarded nor punished. A "before" as well as an "after" gradient of effect was found. Comparison of the experimental and control groups showed that the punishment "wrong" decreased the repetition of the responses which it followed. Rewarded responses were divided into those that were repeated on the second trial and those that were not. Both "before" and "after" gradients were found in the case of "right" responses which were repeated; neither was found with "right" responses which were not repeated. This finding for the "after" gradient is consistent with the guessing-sequence hypothesis of Jenkins and Sheffield. That hypothesis, however, does not account for the similar finding for the "before" gradient. Miss Dorothy Martens executed the present experiment, the analysis of the results reported here being the responsibility of the writer.

CHILDHOOD AND ADOLESCENCE

Program arranged by the Division on Childhood and Adolescence

3:00 P.M., Thursday, September 11

Italian Garden, Hotel Book-Cadillac

BETH WELLMAN, Chairman

3:00 P.M. Physical differences Between Ranking and Non-ranking Adolescent Boys in a National Search for Scientific Talent. *Harold A. Edgerton, Ohio State University, Stewart H. Britt, McCann-Erickson, Inc., and Ralph D. Norman, Princeton University.* (106)

PROBLEM: 1. To ascertain what, if any, differences in height, weight, and physical condition exist between a highly scientifically talented group of boys in late adolescence (A Group) and another group not so talented (B Group).

2. To contrast these groups, as far as possible, with a comparable group of average adolescents of the same age range.

POPULATION: Data based on a three-year followup of boys in a national search for scientific talent according to following N's. First year: A Group, 220; B Group, 1786. Second year: A. Group, 204; B Group, 1394. Third year: A Group, 191; B Group, 1257. These groups were contrasted in the first, or most representative year, with a comparable Army inductee group of 6730 cases.

PROCEDURE: Winners and Honorable Mentions in the talent search constitute the A Group, while the "also rans" constitute the B Group. The data on these groups were collected by means of followup questionnaires sent out to all contestants. Army cases were taken from published Army figures. Means of height and weight, and percentages of no defect or defect in certain areas (vision, hearing, limbs, etc.) were compared by means of critical ratio method. The top winners were compared separately with the non-ranking group and Army cases.

RESULTS: The results show that both the A and B Groups are statistically significantly superior, with very large critical ratios of differences, to the Army inductees. The A Group, and the top winners particularly, are superior to the B Group in height, although this difference is not statistically significant. The B Group is slightly superior to the A Group, and the top winners particularly, in weight, but this difference too is not statistically significant. This slight superiority may be accounted for by difference in age, the B Group being somewhat older. As regards physical condition, the A Group, and top winners particularly, are definitely superior. Except for the first year, wherein the A

Group indicates greater significant excess of poor vision, there appears to be quite definite superiority for this group in other physical areas. This is most especially true in the second and third years. Both groups are highly superior to the Army group in the category of "no defect."

CONCLUSIONS: This study corroborates practically all of the previous researches done by such investigators as Galton, Terman, Hollingworth, Witty, et al, on the superiority of the gifted, especially when contrasted with the "average" child. Although the experimental groups in this study were selected for scientific promise, and there is some "roughness" to the method of collection of data contrasted to that of the previous investigators doing research on the gifted, the materials herewith presented closely parallel investigations on the very superior in intelligence.

3:15 P.M. The Mastery of Vowel and Consonant Sounds During the Period of Infancy. *Orvis C. Irwin, State University of Iowa.* (107)

PROBLEM: It is apparent from previous work that individual vowel and consonantal sounds appear in infant vocalization at different times and with varying frequencies. It is the aim of this report to indicate the status of these sounds at various age levels.

POPULATION: A group of 95 infants from birth to thirty months of age were included in the investigation.

PROCEDURE: The infants were visited each month in their homes, and transcripts in the International Phonetic Alphabet were made of the sounds occurring on each of thirty breaths.

RESULTS: The results are presented by means of profiles at successive age levels and by means of curves for various vowel and consonant categories. The profiles show that not all vowel and consonant sounds are present in the vocalizations of young infants and that there is a gradual acquisition of sounds so that at two and a half years the profiles resemble but are not identical with those for the adult. The curves of the categories of vowel and consonant sounds indicate that front vowels decrease during the period of infancy whereas back vowels increase in use. When consonant categories are analysed according to place of articulation, glottal consonants decrease sharply while labials and post-dentals increase. Velars and palatals show little change. When consonants are analysed according to the manner of articulation, fricatives show the greatest decrease while plosives and nasals make the largest increases. Semi-vowels and glides are the least frequently used classes of consonants during infancy.

3:30 P.M. The Relation of Age and Test to Consistency of Mental Growth from Birth to Eighteen Years. *Nancy Bayley, Institute of Child Welfare, Berkeley, California.* (108)

PROBLEM: This report contributes data bearing upon the consistency of mental growth during the first 18 years of life as it is related to (1) the tests used, (2) the method of determining relative status, and (3) the ages of the children when tested.

POPULATION: Forty children, originally selected as normal infants in an urban community, have been tested repeatedly at regular intervals from one month through 18 years.

PROCEDURE: IQ's and Standard Scores (computed for this group) are compared on the following tests: the California First-Year Mental Scale, The California Preschool Scale, the Stanford-Binet (1916 and 1937 Revisions) the Terman-McNemar Group Test, and the Wechsler-Bellevue Adult Intelligence Test.

RESULTS: Mean IQ's varied with the test and the children's experience with the test. However, IQ variations due to these factors have been controlled by computing for each child Standard Scores based on the means and S.D's of this group with similar testing experience. Individual curves indicate that a child's intelligence is more stable from test to test, as seen in his Standard Scores, than would appear from the IQ's. Test-retest correlations at different age levels have been computed for scores on the total tests and on selected groups of test items. No adequate basis for prediction of mature status from the infant scales has been found from any selection of items so far made. Scores made during school age, however, tend to be stable for most children. After 8 years, r's between different tests are not significantly lower than those between repeats of the same test.

CONCLUSIONS: As recorded in test scores, the course of intellectual growth in each child is unique, presenting an over-all pattern of development which rarely parallels the average for more than a few years. These patterns of growth are clearly seen when scores are plotted against age over the entire 18-year span. Relative status may change at any age, though the changes are most prevalent, rapid and extreme during the first two years.

3:45 P.M. Socio-economic Status and Academic Performance of Negro College Women, North and South. *S. O. Roberts, Fisk University.* (109)

PROBLEM: The purpose of this study was to investigate the hypothesis that the difference in academic performance between Northern and Southern Negro women students (of comparable socio-economic background) becomes less with succeeding semesters of residence in a Southern college community.

POPULATION: The subjects were one hundred sixteen (116) sophomore students who had entered college directly from high school in 1945, and who had been in

residence for three successive semesters. Forty-five (45) came from the North and seventy-one (71) came from the South.

PROCEDURE: Parental occupations were classified according to the Minnesota Occupational Scale. The semester letter grades were assigned sigma-equivalents; these values were then analyzed by region and by socio-economic level for each semester.

RESULTS: For each semester the academic average was in favor of the Northern group compared to the Southern group of comparable socio-economic status as determined by the occupation of the father. The occupation of the mother, however, yielded regional differences which were, in more instances, statistically significant. The differences for regional groups in the upper-third of their high school graduating classes *increased* with each succeeding semester. Groups matched in terms of socio-economic status and rank in high school graduating class revealed differences which were smaller than those determined by parental occupation. There was, though, no consistent trend for the differences in averages to become *less* with each succeeding semester for either the regional or the socio-economic groups.

An analysis of the fourth semester results will also be presented.

CONCLUSIONS: These results based upon a year and a half of college residence tend to refute the broad hypothesis developed in a previous paper. In that instance, it was suggested that the large difference on the ACE in favor of the Northern group could possibly be explained in terms of the establishment of different standards of performance relative to their previous school environment. Whatever factors produced the ACE differences upon college entrance appear to be still functioning in the case of college achievement. Even though these young women had shared a common environment of college life and general education classes for a year and a half, the relative superiority of the Northern students was affected in no consistent fashion. However, the differences in academic performance were frequently not as great as those observed for the ACE.

4:00 P.M. Treatment of a Child in Conflict. *W. Mason Mathews and Staff, Merrill Palmer School.* (110)

PROBLEM: To demonstrate to students in training the usefulness of a cooperative approach illustrating the specific contributions of social work, psychological services, and treatment technics as applied to helping a young child in a serious conflict situation; the child's problem was intensified because of a broken home situation and because of frustration of his basic needs at each critical point in his development.

POPULATION: A single child, his family, and his school.

PROCEDURE: This child was accepted for special services by the Department of Psychology as a result of behavior which did not respond to group management. During the diagnostic procedure, a complete social and developmental history was obtained. In addition to this, general intelligence tests, Rorschach examinations, and play interviews were used. Following this, a series of ten play interviews was used as treatment together with special planning and management in the nursery school.

RESULTS: A systematic analysis of the play interview and related diagnostic and history material indicates a progressive acceleration in growth during the treatment period and a definite improvement in situational behavior. In the play situation, growth was indicated by the working through of developmental difficulties, first at the fantasy level and gradually approaching the reality situation. This appears in clearly differentiated successive steps, as the child progresses toward the attainment of mature behavior at his own age level. It was further demonstrated that, as the conflict disappeared, the child was able to behave in ways that were more spontaneous, more socially integrative, and more creative, both in the area of social relationships and in intellectual function.

CONCLUSIONS: The usefulness of the cooperative approach in helping a four year old child in a conflict situation was demonstrated; the behavior of this child improved sufficiently to warrant a prognosis of more adequate behavioral responses at present and later age levels; these behavioral changes seemed to have become well enough consolidated into his personality configuration to justify a good deal of optimism for his later adjustment.

SYMPOSIUM: NEW PROCEDURES IN CLINICAL PSYCHOLOGY

Sponsored by the Division of Clinical and Abnormal Psychology

3:00 P.M., Thursday, September 11

Crystal Ballroom, Hotel Book-Cadillac

ROBERT C. CHALLMAN, Chairman

New tests and procedures of promise which are now in the process of validation and standardization will be presented. Their values and limitations, and the steps to be taken in further validation, will be discussed.

SYMPOSIUM: CRITERIA FOR VALIDATION OF MEASURES OF MILITARY LEADERSHIP

Sponsored by the Division of Military Psychology

3:00 P.M., Thursday, September 11

Michigan Room, Hotel Statler

The successful selection of potential military leaders by psychological measurements is dependent upon adequate criteria against which to validate the measuring devices. Discussion will center around the qualities considered

important in military leaders and methods of quantifying such qualities for validation studies.

T. ERNEST NEWLAND, Chairman

Participants: JOHN G. JENKINS, RALPH M. STOGDILL, JOHN C. FLANAGAN, WALTER G. EBERT, and M. W. RICHARDSON.

THE CONTINUITY vs. NON-CONTINUITY ISSUE

4:00 P.M., Thursday, September 11

Banquet Room, Hotel Statler

CLARK HULL, Chairman

4:00 P.M. An Experimental Test of the Continuity Theory of Discrimination Learning with Pattern Vision. *David Ehrenfreund, State University of Iowa.* (111)

PROBLEM: In a pattern discrimination situation, are differential associations formed between the cue stimuli and the responses to them while the animal is exhibiting a systematic position preference, i.e., during the pre-solution period?

POPULATION: Two litter matched groups of hooded rats of both sexes (N = 14 and 15) from the colony maintained by the Psychology Dept. of the State University of Iowa.

PROCEDURE: *Pre-solution.* All rats were given 40 jumps on a modified Lashley stand to upright vs. inverse triangles. The experimental animals were consistently reinforced on only one stimulus. The controls were reinforced and non-reinforced equally often on each stimulus. *Learning.* Half of the controls were then trained to upright (+) vs. inverse (−) and half vice versa. Those experimentals previously reinforced on upright were now trained to inverse (+) vs. upright (−) and vice versa. Training continued until a criterion of 90% correct was attained.

RESULTS: During the 40 jump pre-solution period, none of the Ss responded more than 53% to either triangle. All Ss exhibited a position habit. In the learning of the discrimination problem, the experimental Ss were *retarded* when compared to the control Ss, indicating that differential associations had been formed during the pre-solution period. The differences between the means of the initial errors (26.5 − 16.5), repetitive errors (45.2 − 25.9), and trials (62.7 − 36.9) were all significant beyond the .1% level of confidence as shown by the *t* statistic. Acquisition curves of per cent correct response reveal that both groups start at about 50% and reach 100% in 7 and 10 days respectively.

CONCLUSIONS: The non-continuity theory which assumes that during the pre-solution period the animal learns nothing about the "to-be-finally-learned set of discriminanda," would predict no difference between the experimental and control Ss. The implication from the continuity theory, which postulates learning to be a continuous, cumulative process, is that the experimental Ss would be retarded when compared to the controls. The results confirm the implications of the continuity theory thus supporting the postulate that "learning consists in the cumulative development of an association between the cue stimulus and the response, regardless of the presence of systematic response tendencies to other aspects of the stimulus situation."

4:15 P.M. "Continuity" *vs.* "Non-Continuity" In Human Learning. *W. C. H. Prentice, Johns Hopkins University.* (112)

PROBLEM: Can 'continuous' learning of the sort reported by McCulloch and Pratt and by Spence be demonstrated in human subjects? Or is the phenomenon an artifact of our inability to delimit the 'pre-solution period'?

POPULATION: Eighty undergraduate students divided into two groups both of which learned the same conditioned discrimination problem.

PROCEDURE: Group 1 was 'reversed' after 20 trials and trained to criterion on a solution exactly opposite to the one rewarded during the first 20 trials. Group 2 was trained only on the second of these solutions. All subjects reported on their reasoning processes at each trial.

RESULTS: 1. A significant difference exists between the two groups, the 'reversed' group reaching the criterion more slowly than the 'non-reversed'.

2. Verbal reports give no evidence that reversals took place after recognition of the relevant discriminanda.

3. The total number of 'failures' (to be defined) is, however, the same for both groups.

4. No association can be demonstrated between the number of successes in the first 20 trials and eventual success.

CONCLUSIONS: 1. So-called 'continuous' learning appears to have been demonstrated in a situation where the duration of the 'pre-solution period' has been defined independently of earlier confusing criteria.

2. Some implications of 'continuity theory', however, are not borne out.

3. A theoretical treatment that will reconcile the two opposing views and account for the present results is possible but implies the need for further research.

4:30 P.M. The Continuity, Non-Continuity Issue in Learning—An Appraisal and a Re-formulation. *Robert Leeper, University of Oregon.* (113)

Few experimental problems can throw as much light on the basic controversy between the main current theories of learning as can the continuity, non-continuity issue. Progress on this problem has been hampered, however, by insufficient utilization of relevant experiments, loose use of terms, dependence on certain unproved tacit

assumptions, and a tendency for each extreme view to be supported merely on the grounds that the opposing extreme view had been disproved.

As stated, e.g., by Hull and Spence, the continuity hypothesis (that habit-growth results from every close conjunction of S, R, and reinforcement) is untenable because so many of its basic propositions are disproved by available experiments. Thus: separate habits tending to summate are not formed when the positive and negative stimuli are distinguished in several discriminable ways (Harlow, 1945). Discrimination depends, not on separate positive and negative habits, on generalization gradients, etc., but on the subject's learning a comparison-process, since difficult discriminations are made after animals have been taught, by brief training in a simpler situation, to make the requisite type of comparison (Lashley, 1938). "Set" favoring the use of certain cues tends to keep the subject from learning to use other cues (Snygg, 1935; Lashley, 1942).

Especially as stated by Lashley, however, the non-continuity hypothesis (that learning of the correct discrimination occurs in a few trials in which the animal "attends" to the proper cues) is similarly untenable. Thus: discrimination learning is more gradual than error curves suggest (McCulloch and Pratt,1934; Krechevsky, 1938). Other hypotheses are formed while behavior still is dominated by position habits (ibid., also Spence, 1945). Associations are formed with more than merely dominant perceptual elements (Snygg, 1935; Witkin, 1941). Errors after discovery of the solution contribute to the learning (Leeper, 1935; Dennis, 1939). Stimulus generalization does show a gradient rather than being an all-or-none affair (Lashley, 1938, as opposing Lashley and Wade, 1946).

Apparently, therefore, learning depends considerably on central processes of set, perceptual organization, etc., as the non-continuity view has proposed. But it also seems true that these processes in turn depend on gradual, cumulative effects to a considerable degree, as the continuity view has maintained, and that they are not as meagerly confined to dominant perceptual elements as Lashley has contended.

PRESIDENTIAL ADDRESS

The American Psychological Association

8:15 P.M., Thursday, September 11

Rackham Memorial Building

CARL R. ROGERS

"Some Observations on the Organization of Personality"

Following the Presidential Address the University of Michigan will hold a reception in the Rackham Memorial Building in honor of President Rogers.

FRIDAY, SEPTEMBER 12

PROBLEMS OF RE-EDUCATING PEOPLE IN THE DEMOCRATIC WAY OF LIFE

Program arranged by the Society for the Psychological Study of Social Issues

8:50 A.M., Friday, September 12

Banquet Room, Hotel Statler

RUTH TOLMAN, Chairman

8:50 A.M. The Influence of Group Ideology on Individual Behavior. *Herbert Fensterheim and Herbert G. Birch, New York University.* (114)

PROBLEM: The purpose of this paper is to demonstrate that in groups where political ideology plays an important role, the ideology is a major factor in patterning individual behavior.

POPULATION: The study was carried on in an UNRRA DP camp in Southern Italy. The 800 displaced persons in the camp were all Jewish and almost all had recently been in concentration camps or partisan groups.

PROCEDURE: The evidence presented is the result of field observation in this camp for a period of seven months.

RESULTS: Upon arrival at the camp, the DP's presented a homogeneous picture of chaotic social behavior dominated by a non-adjustive aggressiveness. Due to a selective factor, Zionism was the prevalent ideology. Based on this ideology, groups developed, each identifying itself with a different Zionist political party. During the period of formation, individuals joined groups for superficial reasons. After the initial formative period there was little intergroup movement. Two groups with very different political philosophies serve as an illustration. One group was "fascist" and, in accordance with its philosophy, developed into a military organization with orders and leaders superimposed from above. The second group was "socialist" and developed into a collective community with major decisions being made at general meetings. Although the behavior of the individuals in both groups became more adjustive, very different generalized attitudes developed. In the "fascist" group, aggressiveness remained the dominant factor of individual behavior with emotional instability a common feature. The individual of the "socialist" group was the better adjusted, had greater social awareness and no longer had aggression as the dominating mode of behavior.

CONCLUSIONS: The differences in the behavior of the individuals were a direct result of the differences in the social organization of the groups. This latter, in turn, stemmed directly from the political ideology with which the group identified itself.

9:05 A.M. The Problem of German Re-Education. *Charlotte Bühler, Los Angeles, California.* (115)

The reports on the attempts made for German re-education have all been particularly pessimistic. There are many reasons why this had to be expected. A few general, as well as concrete factual reasons for these difficulties will be discussed in this paper.

The following are the general reasons:

1. Different European countries have very different attitudes toward other cultures. It is interesting to observe to which degree different European nations allow themselves to be culturally influenced by certain other nations. The Germany of the last two generations has developed, more and more, the attitude that no other nation could give them very much culturally.

2. Adult education is looked upon quite differently in European countries than in America. Academically trained persons, particularly, are, in a way, not expected to be students of others. They are supposed to teach themselves through reading or discussions.

3. Theoretical principles and practical demonstration have a different weight in German teaching as compared with American. The German is quite inaccessible to the teaching of cultural subjects or ideas if they are brought to him in a purely practical or casual form.

4. The personality and objective competence of the teacher are evaluated in different ways than in America.

For these reasons, only an intimate knowledge of the German is the first pre-supposition of any success.

Apart from the general, there are specific factual reasons which make the German adhere to his tradition and system of ideas more strongly than other nationalities. We can see that in comparing individual families of different European nations, and we can see it also in psychotherapy with German immigrants to America, even if the families have been settled here several generations.

Some examples of this will be brought.

9:20 A.M. Education to Clear Thinking and Greater Consciousness as Part of the Re-Educational Program in Germany. *Curt Bondy, Richmond, Virginia.* (116)

Germany's present situation is catastrophic. Not only are political and economic problems unsolved, but re-educational efforts have been insufficient, unsystematic and confused. A large part of the German people are frustrated as far as satisfaction of basic drives and feelings of security are concerned. They are becoming increasingly hopeless, cynical, egocentric and aggressive.

A special contribution that psychologists can make toward solving these problems is the development of a re-educational program which would stress: 1) teaching of the processes of clear thinking, needed to prevent the further growth of superstitions and prejudices; 2) education to greater consciousness (clarification) which must be taught to overcome the consequences of Nazi indoctrination. Such clarification is needed not only in dealing with neurotic patients but as an essential part of all modern education.

A psychology of this kind embraces philosophy, pedagogy, psychiatry and semantics. Although such a combination is not new in Germany, it can be more widely developed and applied with the help of American psychologists. It could and should be taught widely in high schools, universities, teachers colleges and adult education centers. As far as possible, the courses should be worked out in close connection with democratic life situations.

The need for this psychological training in other countries, including America, will also be brought out.

9:35 A.M. An Experiment in Training Groups of People to Answer Anti-Minority Remarks in an Effective Fashion. *Abraham F. Citron and John Harding, Commission on Community Interrelations of the American Jewish Congress.* (117)

This research is concerned with the effectiveness of two methods of training people to answer bigotry expressed in the form of public anti-minority remarks. The individuals trained were members of New York City chapters of the Women's Division of the American Jewish Congress. Most of them were middle class housewives.

Six groups were formed, averaging 16 members apiece. Each group met five times with a leader trained in methods of group work.

The training program was based on the results of CCI's experiments on the effectiveness of various types of answers to anti-minority remarks. In three of the groups the training procedure consisted entirely of discussion and role-practice in answering anti-minority remarks. In the other three groups about two-thirds of the training period was spent in this fashion and the other one-third in an analysis of the attitudes, implanted in personality through participation in our culture, which inhibit people in making an effective public answer to a bigot.

Three types of measurement were made in each of the training groups: (1) Observations recorded during the training sessions by observers selected and trained for this purpose, (2) reports made at the end of the training period by the trainees, and (3) reactions of a small number of trainees in "test incidents" which were arranged at the beginning and at the end of the training program to give them an opportunity to demonstrate the extent of their ability to answer anti-minority remarks. The effectiveness of the two training procedures will be analyzed in terms of each of these three criteria.

Mr. Bernard Resnikoff and Mr. Samuel Soifer of the New York School of Social Work gave invaluable help in carrying out this experiment.

ANIMAL BEHAVIOR I

8:50 A.M., Friday, September 12

Bagley Room, Hotel Statler

FRANK A. BEACH, Chairman

8:50 A.M. Response Fixation Under Anxiety and Non-Anxiety Conditions. *I. E. Farber, State University of Iowa.* (118)

PROBLEM: The hypothesis that fixation (nonadaptive persistence) of a response developed in a shock situation may be due to secondary reinforcement resulting from anxiety reduction was tested by comparing the resistance to extinction of such a response under a condition in which the anxiety had been removed with that under a condition in which the anxiety had not been removed.

POPULATION: 96 naive male rats assigned at random to four conditions.

PROCEDURE: Two groups of Ss were shocked at the choice-point for 60 trials in a single-unit T-maze, with food reward in the goal box on their preferred side. One group (shock-fed) was then fed in the maze at the locus of shock to eliminate the anxiety aroused by the cues at this point. Training was then resumed, with the shock removed and the usual food reward shifted to the non-preferred side for all Ss. Two additional groups were run as a control under these same conditions, but were not shocked. As in the shock conditions, one control group (non-shock fed) was fed at the choice point whereas the other was not. Ss in all four groups were run under the food-reversal condition without shock until their original response was extinguished.

RESULTS: (1) Responses of shock animals not fed at the locus of shock showed great resistance to extinction as compared with those of the non-shock animals. (2) Responses of shock animals not fed at the locus of shock were significantly more resistant to extinction than those of shock animals whose anxiety was eliminated by the feeding procedure. (3) The number of trials to extinction for the shock-fed animals was not reliably different than that for the two control (non-shock) groups. (4) The average number of extinction trials required for the two control groups, one of which was fed at the choice-point following initial training and the other of which was not, was practically identical.

CONCLUSIONS: (1) The shock condition was adequate to produce fixation (great resistance to extinction) in Ss not subjected to the "therapeutic" treatment of feeding at the locus of shock. (2) The prevention of fixation in the shock-fed animals was the result of interference with some mechanism maintaining the nonadaptive responses in Ss not fed at the locus of shock rather than the result of direct interference with the responses themselves as a consequence of feeding at the choice-point. (3) This maintaining mechanism was a function of the secondary reinforcement produced by escape from the cues at the locus of shock and the resultant reduction of the anxiety elicited by them. The elimination of anxiety in the shock-fed animals precluded this mode of maintenance of their responses during extinction. (4) The consistency of the results with the hypothesis of secondary reinforcement and their consequent explicability in terms of ordinary learning principles renders unneccessary, in this instance, the interpretation of fixation as an "abnormal" phenomenon.

9:05 A.M. A New Conditioned Response Technique to Investigate "Experimental Neurosis" in the Rat. *Sidney W. Bijou, Indiana University.* (119)

The investigation of experimental neurosis and other areas of "experimental psychopathology" in animals would, in all probability, be accelerated if there were a conditioning technique which could employ laboratory rats for subjects. Conditioning techniques established for higher animals, such as the dog or the sheep, are not suitable for the rat because of differences in structure and general behavior; methods ordinarily employed in conditioning studies of rats are not adequate for investigating problems of experimental neurosis since gross random movements are usually unrestricted. It would, therefore, be desirable to have a method that would yield reliable, objective records of the rat's behavior in the various phases of the conditioning process and would permit control over bodily movements as is characteristic of classical conditioning.

Results from a systematic series of five experiments led to the construction of an instrumental conditioning apparatus and technique which satisfy the criteria. It involves (a) a head stock and harness which permit the animal to remain in a natural, comfortable position during the conditioning process, (b) a head extension response to a lever, (c) reward training, (d) control over the time and interval of trials, (e) polygraph measures of habit strength, extinction, differentiation and struggling movements, and (f) objective measures of the habituation process.

The salient features of the technique will be described and a schematic diagram of the apparatus will be prepared for use as pass-outs.

Two studies, one involving the results from using different methods of differentiation and the other relating measures of habituation to reactions of conflict, will be cited to illustrate the method.

9:20 A.M. The Incidence of Middle-Ear Infection in Albino Rats Susceptible to Sound-Induced Seizures. *R. A. Patton, Western State Psychiatric Institute and Clinic.* (120)

PROBLEM: The present experiments investigated the relationship between middle-ear infection and the susceptibility of albino rats to sound-induced seizures. The relative incidence of these two variables in young rats from infected breeders was also compared with that from non-infected breeders separately housed in an isolated laboratory room.

POPULATION: The observations reported utilized 195 albino rats of Sprague-Dawley stock maintained on the same purified diet.

PROCEDURE: Sensitivity to seizures was determined in young rats by means of a series of standardized sound-tests between weaning and 60 days of age. Ear infection was diagnosed at autopsy from the presence of purulent discharge in the tympanic cavity. One group of breeders was isolated while another was housed with infected animals and inoculated with the purulent material from the ears of sensitive and infected animals. Male breeders were autopsied before and females at the time the young were weaned.

RESULTS: Preliminary experiments showed that 74.5 per cent of 47 rats (8 litters) were both sensitive to seizures and infected; 17 per cent were infected without having shown seizures; while 8.5 per cent were free of seizures and infection. No non-infected animal had a previous record of sensitivity.

None of 35 isolated young rats from 13 non-infected, non-sensitive breeders showed evidence of middle-ear infection at autopsy. Neither had any animal in this group showed previous evidence of seizures during sound tests. Twenty-four additional weanling rats were separately housed in the same laboratory room for 90 days and 95.8 per cent subsequently were found free of infection while all were free of seizures.

In contrast, 19 infected male and female breeders produced 57 young rats, 70 per cent of which were both sensitive to seizures and infected. Seven per cent were infected but not subjected to seizures while 23 per cent were free of both infection and seizures. Two of the females showed seizures prior to autopsy although non-sensitive before breeding. The vestibular symptoms which characterize the behavior of less than 5 per cent of infected rats were not observed in the groups described above.

CONCLUSIONS: Bacterial infection of the middle and inner ear is known to be a common ailment among domesticated varieties of the Norway rat although this pathological condition has not been previously described in animals showing sound-induced convulsive fits. Although the present experiments do not define the role of such infection in the rat's susceptibility to seizures an extremely high relationship has been found between the two conditions. No sensitive animal in any group was found to be free of infection. These results suggest that this variable may be of importance in explaining the sound-induced convulsions in rats not subjected to specific nutritional deficiencies which various investigators have termed "experimental neuroses," "audiogenic fits" or "sound-induced seizures."

9:35 A.M. Application of the "Inverted" Factor Analysis Technique to the Study of Hereditary Behavior Types in Rats. *Lloyd V. Searle, Naval Research Laboratory.* (121)

The present study was undertaken for the purpose of investigating the psychological nature of maze-brightness and maze-dullness in the hereditary rat strains developed by Tryon. Unlike previous studies, it was designed for a statistical treatment which would permit testing the possibility that these two strains represent different *types* of rats with reference to their general behavior organization. This treatment, which Stephenson has characterized as "inverted" factor analysis, consists in factor-analyzing a matrix of intercorrelations in which the roles of individuals and test measures have been interchanged, such that correlations are computed among the various individuals, instead of among tests, with reference to the "sample" of test measures selected from a defined behavior universe. Each resulting factor represents a group (cluster) of individuals whose characteristic behavior profile defines a behavior type.

Thirty measures were obtained of learning, emotionality, activity, and other behaviors for samples of 10 Brights, 10 Dulls, and 15 rats of a median strain. The latter group was used as a reference group, representing the normal rat population, in terms of which standard score profiles could be obtained for members of the Bright and Dull strains. Analysis of the table of intercorrelations computed among individual rat profiles resulted in two major factors which were easily identified as corresponding separately to the two strains. It is implied that the failure of past correlational studies to yield evidence of clearcut "factors" in the behavior organization of lower animals, which has been interpreted to indicate that the behavior of animals below man is relatively unstructured, may be due to the unrealistic nature of basic postualtes underlying the conventional factor analysis procedures, perhaps principally to the initial assumption that all individuals within a given species are of the same psychological type.

PROFESSIONAL SERVICES

8:50 A.M., Friday, September 12

English Room, Hotel Book-Cadillac

GEORGE K. BENNETT, Chairman

8:50 A.M. The Buyometer: A New Technique for Measuring Buying Resulting From Reading of Advertisements. *Daniel Starch, Daniel Starch and Staff.* (122)

PROBLEM: The problem was to devise a sound method for measuring the buying resulting from the reading of advertisements. Except for advertisements requesting direct purchases by mail, there has been no satisfactory measure for this purpose.

POPULATION: The results are based on approximately 57,000 personal interviews conducted during the last three years with readers of Saturday Evening Post and Woman's Home Companion.

PROCEDURE: The data were obtained in connection with the continuing program on the reading of advertisements conducted by Daniel Starch and Staff. After the regular readership interview on a given publication was completed and the magazine laid aside, the investigator took a list of frequently purchased products in that issue and asked: (1) Do you use Ipana, Maxwell House Coffee, Crisco, and so forth?; (2) If "yes," When did you last buy it?

RESULTS: The results were tabulated to show (a) per cent of readers of the advertisement who bought the product within 10 days after the appearance of the publication; (b) per cent of non-readers of the advertisement who bought the product within the same 10 days; (c) per cent of readers who bought the product within 20 days before the publication appeared; (d) per cent of non-readers of the advertisement who bought the product within the same 20 days before the publication appeared; (e) per cent of users of the product who read the advertisement; (f) per cent of non-users of the product who read the advertisement; and various other relationships.

Results indicate, for example, in the case of a certain dentifrice that 14.4% of readers of the advertisements bought the product within 10 days, that 19.6% of readers of the advertisement bought this product within 20 days before the advertisement appeared (they read the advertisement when the publication appeared), that 7.5% of non-readers of the advertisement bought this product within 10 days after the publication appeared, and 12.9% of non-readers of the advertisement bought this dentifrice within 20 days before the publication appeared.

CONCLUSIONS: These results indicate that the readers of the advertisement were a different group from the non-readers, since a larger percentage of readers bought the product (19.6%) before the publication appeared than non-readers (12.9%). However, if reading of advertisements of this product had no effect on buying, then 19.6 : X as 12.9 : 7.5. Hence, X = 11.5, the per cent of readers of the advertisement who would be expected to buy the product after reading if reading had no influence on buying. Instead, however, 14.4% bought after reading or an additional 2.9 points.

9:05 A.M. Current Tests in Industry. *Herbert Moore, Toronto, Ontario, Canada.* (123)

PROBLEM: The extent to and the manner in which tests are being used in industry.

POPULATION: 3600 companies.

PROCEDURE: Questionnaire was sent by the National Industrial Conference Board to 3600 companies; replies were received from 2135. Results were tabulated and comments summarised.

RESULTS: 1520 of those who replied had no experience with tests; 538 had some experience—of these 1.6% started using tests between 1915–20, 3.2% between 1921–25, 3.2% between 1926–30, 5.1% between 1930–35 16.2% between 1936–40, 47.6% between 1941–45, and 23.1% since early 1946. The paper will be concerned with some implications that seem warranted on the basis of comments from users of tests.

CONCLUSIONS: The experience of the 1920's, on a grander scale, is in the offing.

9:20 A.M. The Occupational Classification of Federal Relief Clients and Its Relationship to Educational Level, Age, and Race. *C. G. Browne, Ohio State University.* (124)

PROBLEM: To study the occupational classifications of Federal relief clients and relate them to educational level, age, and race of the group.

POPULATION: Persons receiving Federal emergency relief in Cook County, Illinois through the Evanston, Illinois, relief office (northwest section of Cook County, including suburban, city, and rural areas). N—2513. White N—1649. Negro N—864.

PROCEDURE: All persons eligible for work placement on the relief rolls were assigned an occupational classification. These classifications were combined into eleven major groupings, tabulated for educational level, age, and race. Total figures and percentages for each age grouping, completed years of education, and race were calculated. Following the individual group comparisons, combined and total breakdowns were made.

RESULTS: Percentages of each of the eleven major groupings to the total indicate a distribution skewed toward the unskilled end of the scale of occupations. The curve for the educational level of the total sample has a negative

skewness, 72% of the total group having no education beyond the eighth grade. Each occupational group has a different educational level, there being a positive relationship between skill of work and education. The unskilled laborers have a mean education of 5.9 years and the general office workers, 10.7 years. In each occupational grouping, the mean educational level of Negroes is lower than for whites, with the exception of the white-collared occupations. There is a negative relationship between age and education, the average education of the 15–19 year group being 9.5 years, and of the 70 years and over group, 6.5 years. Approximately 34% of the population is Negro, but the relationship of Negroes to white varies widely in the individual occupational groups. The mean age for all occupational groups is 39.0 years, ranging from 20.0 years to 46.6 years. Detailed analysis of the above results will be presented.

CONCLUSIONS: In a community of general above-average economic status, but with a wide range of occupational groups, professional and higher-level workers are likely to be self-supporting during periods of national economic depression. The relationship between relief and education and occupational status may be the result of (1) education or the lack of it, (2) the occupations which are open to the less educated, or (3) individual differences within the group which are not measured in this study. The relationship between age and educational level indicates—first, the general tendency toward more education; and second, the tendency for the more educated older men to be self-supporting during economic stress. The proportion of Negroes in an occupational group is an index of (1) their acceptance as workers in the group, and (2) their educational level, which needs to be higher than for whites in the more generally desirable office and white-collar occupations.

9:35 A.M. "Counseling" Agencies in Greater Boston. *Lowell S. Trowbridge, Boston University.* (125)

PROBLEM: To study the personnel, methods, and types of cases accepted and procedures used by agencies in the Greater Boston area who do "counseling" and whose services are directly available to the public.

POPULATION: The study deals with 40 agencies reported as doing counseling and listed in *Vocational Counseling and Placement Agencies in Greater Boston,* published by Greater Boston Vocational Guidance Association, as well as agencies offering the public their services through the classified section of the telephone directory or through newspaper advertisements.

PROCEDURE: The Massachusetts Society of Mental Hygiene appointed a committee of three psychologists to make the study. This committee drafted a letter which went to the agencies, explaining the purpose of the study and asking cooperation. The committee also prepared an outline for interviewing. With the assistance of qualified interviewers and secretarial help, organizations were visited and executives interviewed.

RESULTS: Of the 40 agencies contacted, more than 30 were visited and studied. The other 10 were uncooperative or very highly specialized, as those counseling people with T.B., cases of physical handicap like hearing loss, and the like. Of the 30 intensively studied, some professed to do only vocational counseling. One did a kind of "psychoanalysis." Some used standardized tests while some preferred tests of their own invention, while still others used their "personal method" of interpreting well-known tests.

CONCLUSIONS: The term "counseling" is very misleading. Most of the 30 agencies studied lacked well trained and qualified clinical psychologists, or psychiatrists, on their staffs. Undoubtedly such "counseling" agencies treat seriously ill people as routine educational or vocational cases. There is a need for defining and limiting "counseling" agencies as to the type of problems with which they may deal. Some method of certifying or listing "counselors" and "counseling agencies" must be worked out to protect the general public as well as truly responsible and qualified counselors.

PROBLEMS IN COMBATTING RACIAL AND RELIGIOUS PREJUDICE

Program arranged by the Society for the Psychological Study of Social Issues

10:00 A.M., Friday, September 12

Banquet Room, Hotel Statler

EUGENE L. HARTLEY, Chairman

10:00 A.M. Some Remarks on the Motivation for Anti-Semitic Attitudes. *Marie Jahoda and Nathan W. Ackerman, American Jewish Committee.* (126)

PROBLEM: To discover the motivational patterns underlying anti-Semitic attitudes in the functioning of personalities undergoing psychoanalytic therapy.

POPULATION: Twenty-seven case studies.

PROCEDURE: Analysis of these case studies which were collected from practising psychoanalysts according to an extensive schedule in personal interviews lasting several hours.

RESULTS and CONCLUSIONS: The material furnishes evidence for establishing two ideal types (in Max Weber's terminology) of motivation for anti-Semitic attitudes: on one extreme, anti-Semitic attitudes come into existence as the result of conformity to group pressure; on the other extreme, anti-Semitic attitudes are motivated by specific personality conflicts which are related to specific items in the content of the culturally developed negative

stereotype of the Jew. Although the two types of motivation overlap in every actual case, it is possible to determine the dominant type. In either case certain events in the life history of an individual predispose him to the development of hostility patterns. Whichever is the dominant motivational pattern, anti-Semitism has a functionally well-defined role in the mechanisms of self-defense which are brought into play as an attempt to avoid facing the damage to the ego.

The implications of the existence of these two types for designing action to combat anti-Semitism and for making a prognosis of the success of such action are discussed.

10:15 A.M. A Study of the Social, Economic, and Psychological Correlates of Intolerance Among Urban Veterans of Enlisted Rank. *B. Bettelheim, M. Janowitz and E. A. Shils, University of Chicago.* (127)

PROBLEM: Efforts to combat racial and religious prejudices should be based on a scientific investigation of the crucial factors associated with intolerance. Studies on intolerance among college students should be complemented by studies of other sectors of the population. This study investigated correlates of intolerance among a random sample of male adults. Social, economic and psychological traits associated with intolerant verbalizations about Negroes and Jews were investigated.

POPULATION: A random sample of 150 Mid-Western urban veterans of enlisted rank were studied.

PROCEDURE: Standardized intensive interviews were conducted by psychiatrically trained interviewers. Data were collected on social and economic characteristics. Projective questions permitted evaluation of subjects' apprehensions in regard to personal, economic, and political matters. Systematic content analysis of all references to ethnic groups, both spontaneous and elicited, enabled ordering of the cases on a four point continuum of intolerance toward Negroes and Jews.

RESULTS: No association of anti-Semitism was found with socio-economic status, nativity of parents, formal composition of the family, political or organizational affiliation, religious denomination or the veterans reading and radio listening habits. The social mobility of the veterans as measured from their pre-war position to their post-war position at the time of the interview, was *significantly* related to intolerance toward Negroes and Jews. The downwardly mobile veterans were found to be *significantly* more intolerant than the no mobility or upward mobility groups. Intolerance toward the Negro was also related to socio-economic status. The highest concentration of anti-Negro attitudes was found in the semi-skilled category. Subjects who recalled the last depression as a period of suffering tended to be more intolerant than those who recalled that their families managed to get through the depression quite well. Apprehension about future unemployment and the belief of one's inability to achieve one's occupational ambition were significantly associated with ethnic intolerance.

Religious conviction (acceptance of religious authority) was positively related to tolerance, regardless of denominational affiliation.

CONCLUSIONS: Ethnic intolerance is not as closely related to apparent or objective barriers, or frustration, as it is to individually or subjectively defined frustrations. Objective deprivation experienced during service (as measured by length of service, wounds etc.) was found unrelated to intolerant attitudes. In contrast, intolerance was found to be *significantly* related to *subjective* feelings of deprivation in army life. Veterans who had no identification with the war or national symbols and who drew no personal security from such identifications were found to be the most intolerant.

10:30 A.M. Psychological Problems of Minority Group Members in Utilizing Anti-Discrimination Legislation. *Gerhart Saenger and Norma Cordon, New York University & New School for Social Research.* (128)

The success of attempts to combat discrimination in employment through legal means depends in part on the extent to which minority group members make use of laws designed to curb such discrimination. Psychological factors operating against the full use of such laws by minority members are (1) forgetting or suppression of past experiences of discrimination, (2) evasion of discrimination through changes in aspirations, (3) absence of group identification, (4) acceptance of majority attitudes.

To preserve self-esteem minority members suppress past experiences of discrimination. Evasion of discrimination is found where a person lowers his aspiration level and follows economic and social pressure rather than interest and ability. Frequently experiences of discrimination do not lead to complaints because the victim's pride and desire to preserve his self-esteem prevent him from seeking employment where he is not wanted. In such cases he usually fails to see the broader implications of his failure to act in the interest of his group. In other cases acceptance of majority prejudices by minority group members leads to negative attitudes toward the law itself. Here security is gained by a refusal to identify oneself with one's group often followed by prejudicial attitudes toward groups of still lower status. While not all of these mechanisms operate on the conscious level—as shown by the use of projective questions—they all operate to reduce the number of complaints made to the law enforcing body.

The study is based on intensive interviews of a cross

section of 500 New York City families, stratified by race, religion, and socio-economic status.

10:45 A.M. The Effects on Intergroup Attitudes of Participation in an Inter-racial Play Center. *Russell Hogrefe, Mary Catherine Evans, and Isidore Chein, Commission on Community Interrelations of the American Jewish Congress.* (129)

PROBLEM: This experiment was designed to answer the two following questions:

1—Does supervised play in inter-racial groups produce a change in the attitudes of the participants toward persons of different racial and religious backgrounds?

2—Can attitude change toward newly developed friends from different racial and religious groups be generalized to attitude change toward entire groups by frequently calling attention to the ethnic background of the new friends?

POPULATION: Two hundred and forty children of the 1946–47 Saturday afternoon Horace Mann-Lincoln Neighborhood Center in New York City were assigned to twelve groups on the basis of age, sex and race.

PROCEDURE: Twelve trained group leaders were assigned to the groups on the basis of sex and race. Leaders of six experimental groups were given instructions to call the attention of their children to the mixed ethnic composition of their groups while no reference was made to ethnic composition in six control groups.

At the beginning of the Center program in October 1946, the "Face Game," a disguised attitude test of prejudice, was administered to all groups. Six times during the Center year a "Pick a Partner" test, a simple performance test of voluntary segregation, was administered in all groups. At the close of the Center in May, 1947, the "Face Game" was readministered in all groups. A sample of twenty-five percent of the Center children from both experimental and control groups and a comparable number of siblings and school mates who had never attended the Center were individually tested after the close of the Center. The post test included a projective test employing the use of Negro and white miniature figures; a ranking test of ethnic groups and a social distance test.

RESULTS: Results based on the before and after "Face Game" test; the on-going "Pick a Partner" tests, and the three-part individual post-test will be reported for the experimental and control groups and for the Center children and the non-Center children.

ANIMAL BEHAVIOR II

Program Arranged by the Division of Physiological and Comparative Psychology

10:00 A.M., Friday, September 12

Bagley Room, Hotel Statler

S. D. SHIRLEY SPRAGG, Chairman

10:00 A.M. The Genetics of Audiogenic Seizures in House Mice. *Calvin S. Hall and Governor Witt, Western Reserve University.* (130)

PROBLEM: The problem is to determine the number and nature (whether dominant or recessive) of genetic factors which account for the previously demonstrated difference in the incidence of audiogenic seizures in two inbred strains of house mice.

POPULATION: Approximately 300 mice will have been tested for audiogenic seizures by September, 1947

PROCEDURE: The two inbred strains, C57 (low in susceptibility to audiogenic seizures) and dba (high in susceptibility to audiogenic seizures) are crossed to obtain a hybrid F_1. These hybrids are inter-mated to obtain an F_2 generation. Animals of F_1 are backcrossed to the parental C57 strain. The offspring of the backcross are also backcrossed with the parental C57 strain. This is the standard genetic procedure for determining dominance and recessiveness. Reciprocal crosses are also made to check on the maternal influence and sex linkage. All mice are tested under the same conditions and at the same age.

RESULTS: 83 mice have been tested to date (May 15, 1947) 56 have been F_1 mice (C57 x dba) and of these 56, 52 or 93% have had audiogenic seizures. This suggests that the factor (or factors) for susceptibility to seizures is a dominant (or dominants). Sufficient F_2 and backcross mice have not as yet been tested, but preliminary results bear out the hypothesis that there is a single dominant gene for audiogenic seizures.

CONCLUSIONS: This study was made to determine the number and dominance-recessiveness of the genes responsible for susceptibility to audiogenic seizures in mice. At least 300 mice will be tested by September, 1947. Present results, based upon 83 mice, indicate that there is a single dominant gene for susceptibility to audiogenic seizures.

10:15 A.M. Non-Adaptive Behavior Resulting from a Series of Defeats in Fighting Mice. *J. P. Scott, Roscoe B. Jackson Memorial Laboratory.* (131)

PROBLEM: These experiments were designed to test the theory that training can be a cause of non-adaptive social behavior, and essentially concern a situation in which an animal with prolonged negative training is given weak positive stimulation.

POPULATION: The experimental animals were adult male mice of the C-57 black strain, inbred for many generations and genetically almost 100% homozygous.

PROCEDURE: These mice were defeated by experienced fighters for half hour periods on alternate days for varying periods and then given daily repeated opportunities to attack harmless males for two weeks or until the subjects began to attack regularly.

RESULTS: Undefeated mice or mice that have been defeated only once at first run away, but later attack het helpless males on the first or second days. Mice which have been defeated several times continue to react to the helpless male as if to an attacking mouse for long periods. If a mouse is given as many as five or six defeats this behavior is continued for at least two weeks, and in two cases has persisted after a two months' rest.

CONCLUSIONS: The behavior of such animals corresponds roughly to what one might expect from the laws of learning. The reaction to harmless mice persists longer in the mice which have been defeated more often. However, such behavior may be considered non-adaptive in two respects: (a) defensive and escape behavior is given in response to harmless mice for long periods, (b) once a certain amount of defeat has been suffered the animals apparently do not discriminate between fighters and harmless mice, but give the same reactions to both. These effects do not appear to be caused by physical injury but by training, and the question is raised as to whether similar phenomena exist in higher animals.

The experimental work on which this paper is based was done by Miss Mary-Vesta Marston, research assistant.

10:30 A.M. The Effect of Experimental Alteration of Metabolism on the Hoarding Behavior of the White Rat. *Eliot Stellar, Brown University.* (132)

PROBLEM: On the basis of behavioral data, Morgan, Stellar, and Johnson suggested two physiological consequences of repeated food deprivation that might underlie the hoarding behavior of rats: (1) the depletion of certain body stores or (2) some more general lowering of metabolism. The present study is an attempt to determine the effect on hoarding of experimentally lowered metabolism.

POPULATION: The hoarding behavior of 20 rats from the Brown University colony was studied under three different conditions of testing.

PROCEDURE: Each of the 10 Experimental animals received 25 mgs. of 2-thiouracil (a thyroid depressant) daily in drinking water and food. The other 10 animals, matched on the basis of previous hoarding, served as the controls. Three conditions of testing were used: 24 days of hoarding 24 hours a day while satiated; 18 days of hoarding $\frac{1}{2}$ hour a day while on 24 hour feeding schedule; and 12 days of hoarding $\frac{1}{2}$ hour a day while partially satiated by extra feedings. The metabolic effect of the drug was determined by the EKG.

RESULTS: Depression of metabolism in the experimental animals was indicated by a mean heart rate 56 beats per minute lower than that of the controls ($P < .05$). However, there was no difference between the hoarding of the experimental and control animals under any of the three conditions of testing.

CONCLUSIONS: These results indicate that experimentally lowering metabolism by depressing the thyroid gland with 2-thiouracil has no effect on hoarding.

10:45 A.M. Some Applications of the General Adaptation Syndrome to Current Problems in Experimental Shock in Animals. *Bernard F. Riess, Hunter College.* (133)

PROBLEM: The determination of the mechanisms operative in the production of shock states in animals by stimuli varying in nature from psychological to physiological.

The general adaptation syndrome is a term used by Selye to describe a series of systemic changes occurring in organisms as a result of prolonged exposure to stress stimulation such as hunger, temperature extremes, fear, burns, surgical interference. The behavioral changes pass in phase from shock through a period of heightened resistance to the complete exhaustion of the organism. The postulated mechanism is the secretion of corticotropic hormones from the hypophysis. These hormones produce a complex of adaptive changes in various organs and systems which in turn, upon prolonged activity lose their adaptive functions and react so as to produce exhaustion and finally the death of the affected organism. The general adaption syndrome concept is used to posit a hypothesis explanatory of induced shock in rats as a result of long continued temperature alternations (cold and hot water immersion) and to electric and insulin stimulation. In the shock and post-shock phases so induced, rats are shown to become more resistant to other toxic agents and as resistance to the specific shock induction stimuli rises less resistant to non-specific agents. The applicability of the hypothesis to sound-induced seizures will be demonstrated as a means of settling the controversy as to whether audiogenic seizures are the result of conflict or of physiological changes. Some exploratory experimental data will be adduced in support of the hypothesis.

MEASUREMENT AND PREDICTION OF PROFICIENCY

Program arranged by the Division of Military Psychology

10:00 A.M., Friday, September 12

English Room, Hotel Book-Cadillac

ANTHONY C. TUCKER, Chairman

10:00 A.M. Selection and Evaluation of West Point Cadets. *Donald E. Baier, Personnel Research Section, AGO.* (134)

PROBLEM: To improve the officer corps of the regular army by developing more valid tests and procedures for selecting and evaluating the cadets of the U. S. Military Academy. The problem is many sided and

involves the construction and pre-validation of scholastic aptitude tests, physical aptitude and/or proficiency tests and personality screening devices; the development of improved grading methods for evaluating cadet performance in scholastic, physical and cadet-officer activities; and the determination of the relationships among standing on selection criteria, cadet evaluation criteria, and officer performance criteria subsequent to graduation from the academy.

POPULATION: Cadets at West Point and applicants from whom they were selected.

PROCEDURE: Scholastic aptitude tests have been constructed and correlational studies made against academic records during the years since 1942 so that several alternate forms are now available for use. Various so-called physical aptitude or performance tests have been developed, their reliabilities studied and factor analyses of their inter-relationships carried on. An experimental multiple-choice biographical-personality screening test has been administered to the applicants for the class of 1951 and those accepted will be followed up to accumulate criterion data. Cadet marks and ratings in all areas of performance have been and are being studied from the point of view of reliability, inter-relationships, official vs. actual relative weight in determining cadet standing, comparability of cadet vs. faculty evaluations, academic vs. non-academic faculty evaluations. A sample of one graduating class has been followed up after 18 months of regular army service to determine relative value of the various predictors accumulated on them as applicants and cadets.

RESULTS: Results have been obtained which enable the improvement of tests, student grading and rating procedures and selection of applicants. Perhaps the most significant finding to date is the marked positive relationship revealed between Aptitude for Service Ratings as a cadet (based on fellow-cadets' ratings) and success as a regular army officer during the first 18 months of service. This relationship is significantly higher than with any other predictor. Scholastic standing shows no relationship to this criterion.

CONCLUSIONS: Improvement in the selection and evaluation of West Point cadets is being accomplished. Further significant gains can be anticipated with confidence in succeeding years of this long term research. Of particular interest will be the relationship between success as an officer and academic grades vs. aptitude for service while a cadet.

10:15 A.M. An Evaluation of Instrument Flying Training Records as Criteria of Pilot Proficiency. *Howard J. Hausman, Andrews Field.* (135)

PROBLEM: To evaluate training records from the AAF Instrument Flying School as measures of pilot proficiency.

POPULATION: This study was done on a sample of three successive classes, a total of 165 pilots, which had completed the training course during 1946.

PROCEDURE: Student records included grades on training missions, each with specific items. Grades were based on deviations from desired constants in altitude, heading, and airspeed. The following indices were evaluated: reliabilities of grades; analysis of the variances; contributions of individual items to total grades; comments by instructors as a possible criterion and diagnostic instrument; relation of grades to previous student flying experience.

RESULTS: Reliability coefficient for entire course, odd-even, was .85. Single missions correlated .75. Student differences were real, but mission differences and, in most cases, class differences, could be attributed to chance. Experienced instructors' grades reflected real student differences while those of inexperienced instructors did not. High grades were positively associated with long experience. Instructors' comments were highly specific, usually critical, and varied. They supplemented grades and helped tie grades to specific behavior. Chi-square tests revealed the items with widespread distributions, which contributed heavily to total score; these may have been the most important items.

CONCLUSIONS: Training records from the AAF Instrument School are good measures of pilot proficiency. They are based on specific items, graded on a well defined scale. Reliability is high; experienced instructors can use the grading scale with similar results. A good analysis of student difficulties is kept on the record.

This type of measure can help evaluate instrument flying proficiency with consistency, which the AAF needs. These records can and should be extended throughout the AAF; however careful supervision of the administration of these measures should be practiced.

With increasing importance of instrument flying, these measures can be used as criteria for validating selection and training procedures for pilots, especially all-weather pilots.

10:30 A.M. A Cumulative Record of Naval Aviator Proficiency. *Howard E. Page, Naval Air Station, Pensacola, Florida.* (136)

Comprehensive cumulative standardized records of performance for students training as Naval Aviators have been difficult to obtain both prior to and during World War II. In the last quarter of 1946 the Chief of Naval Air Training adopted what is now called the

UBAG Grading System. An analysis of all training syllabi was undertaken and rating sheets prepared covering each maneuver in each training flight. Flight instructors rate each student on a comparative basis during or immediately following the training flight on each maneuver undertaken during the flight. Ratings are likewise made on Headwork, Air Discipline, Reaction to Flight, Mental Attitude and Officer-like Qualities. During each phase of training students are rated on performance in Ground School subjects and by Squadron and/or Regiment Commanders and the Officer-in-Charge of Ground School on the following Officer-like Qualities: Military Courtesy, Punctuality, Mental Alertness, Composure, Cooperativeness, Judgement and Leadership. Standardized forms are used for reporting Board Actions, Delinquency Reports, Flight Violations, Down Checks and Accidents. All of these forms are maintained in the Aviation Training Jacket and forwarded with the student to each phase of training.

On completion of training the Jacket is summarized on a Summary Sheet and the Summary Sheet and the entire Jacket forwarded to the Chief of Naval Air Training. At the same time a Fleet Training Summary Sheet is prepared and accompanies the aviator to his Fleet assignment. The Fleet continues to keep a record of the pilot's performance for 18 months and then forwards the Fleet Summary Sheet to CNATra. If at any time the student discontinues training his Jacket with detailed reasons for discontinuance of training is forwarded to CNATra.

While subject to the limitations of rating procedures specific steps have been taken to minimize these: (a) Instructors are required to award ratings in accordance with a normal distribution and monthly checks are made to see that each instructor is awarding ratings in approximately the following percentages: 20% Below Average, 60% Average, 20% Good; (b) Check Flight Instructors are prohibited from studying a student's training jacket prior to making the check flight and rating the student; (c) Board Actions are mandatory if more than 50% of the ratings in any one area are "Below Average"; (d) Standard forms insure that all students are measured on the same tasks; (e) Specific instruction is given on the UBAG System and the reasoning behind comparative ratings to all individuals undergoing training at Instructors' Schools and to other instructors as part of the Foul Weather training program.

10:45 A.M. Word Portraits of Army Prisoners. *H. Max Houtchens, Seattle, Washington, and Gilbert L. Betts.* (137)

PROBLEM: The large number of men inducted in the Armed Forces who became a liability to the organization through behavior necessitating their imprisonment were studied to determine whether preinduction factors could be utilized more effectively in their early rejection or elimination.

POPULATION: These word portraits were gained from case history data given by 1176 prisoners and 1050 normal operating personnel in relation to 150 developmental and environmental factors.

PROCEDURE: These data were then analyzed and the most significant and differentiating items included in a scale called The Biographical Case History. For this study the prisoner group data were reanalyzed in relation to the type of behavior or offense which resulted in their ineffectiveness.

RESULTS: Offenses were segregated into the following five major categories: (1) flight responses (AWOL, desertion, etc.); (2) fighting responses (assault, insubordination, homicide, etc.); (3) grabbing responses (larceny, robbery, forgery, etc.); (4) sex responses (rape, contributing to delinquency, etc.); and (5) all others unclassified. These groups were then compared with one another in an item analysis of the Biographical Case History with a resulting "typical" case history portrait characteristic of the offense or behavior. Differentiating case history patterns do stand out that are highly correlated with the offense charge recorded by the Army.

CONCLUSIONS: It seems immediately evident from these data that the Army prisoner tended to carry on a pattern that was manifested from biographical data preceding his induction. It implies that efficiency in the selection of personnel could have been greatly enhanced through the use of a quantified Biographical Case History at the Induction Station level. Differentiation was also evident for the first offender and recidivist in relation to whether a man was a good risk.

SYMPOSIUM: PSYCHOTHERAPY AND COUNSELING

Sponsored by the Division of Clinical and Abnormal Psychology

10:00 A.M., Friday, September 12

Crystal Ballroom, Hotel Book-Cadillac

R. NEVITT SANFORD, Chairman

SYMPOSIUM: DISCUSSION OF JOB OPFORTUNITIES IN FOUR SPECIALTY AREAS

Sponsored by the Committee on Student Affiliates

10:00 A.M., Friday, September 12

Italian Garden, Hotel Book-Cadillac

SURVEY METHODS IN SOCIAL PSYCHOLOGY

Program arranged by the Society for the Psychological Study of Social Issues

11:10 A.M., Friday, September 12

Banquet Room, Hotel Statler

ANGUS CAMPBELL, Chairman

11:10 A.M. Polls on Anti-Semitism: An Experiment in Validity. *Samuel H. Flowerman, New York City.* (138)

PROBLEM: To discover the stimulus value of items in a poll on anti-Semitism, and to obtain insight into the meaning of responses to these items.

POPULATION: 108 non-Jewish residents of Staten Island, Manhattan and Queens County.

PROCEDURE: A questionnaire was drawn up which contained 10 questions that had been asked in a nationwide poll in January 1946. During September 1946, specially trained interviewers asked these questions in sequence in a traditional polling interview conducted in respondents homes. After the last question was answered, the interviewers returned to the first item and then, for each question, probed freely to 1) determine the degree of understanding of the original question, 2) get at the "actual" opinion of the respondent and 3) to determine whether a reformulation of the original question would improve understanding of the item.

RESULTS AND CONCLUSIONS: An analysis of the responses to the questions and the probes which followed indicates that there is considerable reason for doubting the validity of many of the items. There would seem also to be good reason for exercising the greatest caution in using the responses to any or all of these items as indices of anti-Semitism. Specifically the analysis of the probing questions showed:

1. Considerable shifts in responses because of ambiguity, and position of the question in the interview schedule
2. Multi-dimensionality of key stimulus words
3. Conflict between responses of fact and of feeling
4. Actual misunderstanding of an entire question
5. Existence of negative stereotypes even among those who do not feel "prejudiced"
6. The use by respondents of a seemingly objective question as a projective screen
7. Attitudinal difference between direct responses to the original questions and responses obtained in the subsequent probing interview.

11:25 A.M. The Effect of Question Variations in Public Opinion Surveys. *Don Cahalan and Valerie M. Tamulonis, University of Denver.* (139)

PROBLEM: The purpose of this study was to analyze the differences in national opinion survey findings when questions and question order are varied on alternate forms of survey schedules. This work represents a continuation and extension of some of the studies conducted by Hadley Cantril and associates.

POPULATION: Comparisons were conducted on 79 variations in contexts: 50 were from American Institute of Public Opinion surveys conducted between December, 1944 and March, 1946; 29 were from National Opinion Research Center surveys between September, 1942 and November, 1945. All data were from surveys representative of the national adult population as regards sex, age, race, and socio-economic level. The number of interviews on alternate forms ranged from 970 to 1,657.

PROCEDURE: The various question contexts were divided into 12 categories (e.g., reversing the order of alternatives within a question). Results were analyzed by sex and by three educational levels, to examine whether certain sub-groups were more susceptible to variations in the stimulus. A critical ratio of 2.6 was designated as the criterion of significance for differences observed in answers.

RESULTS: Some of the findings were: *varying the order of questions* usually produced significant differences in response, the difference varying considerably according to the subject-matter involved. *Positive and negative biases,* introduced to measure stability of opinion, yielded significant differences which varied considerably according to subject-matter and the character of the biasing statement. *Varying the order of alternatives within a question* was generally accompanied by respondents' tendency to choose the alternative mentioned last, particularly when alternatives were long or the subject-matter of slight personal relevance to the respondent. *Varying the frame of reference* (general vs. specific questions) produced differences so pronounced as to indicate further need for caution in drawing broad interpretations from results on general questions. *Women* and the *less well educated* were more variable in their answers than were others; however, the pattern of variability by educational levels did not hold on some types of variations—evidently because in some instances the less-educated group was less aware than the better-educated of the implications of the question (e.g., the less-educated might have been less aware of the full significance of emotionally-loaded symbols).

CONCLUSIONS: Some representative conclusions and recommendations are: (1) The split-ballot technique has much value in investigating the consistency and stability of opinion. (2) Extreme caution should be exercised in comparing survey results on wordings and contexts that differ even "slightly". (3) Questions which express only one alternative and call for a Yes-No or Agree-Disagree can lead to marked bias, particularly when opinion is not

well crystallized or the personal relevance of the question is low. (4) There is need for further detailed research on question variations as related to intensity of opinion and respondents' level of information.

11:40 A.M. Problems and Possibilities in Polling Experts on Social Issues. *Arthur Kornhauser, Bureau of Applied Social Research.* (140)

This paper reports observations and conclusions derived from two years' experience in developing and conducting a "poll of experts". The project constituted a serious effort in one corner of the adult education field. It aimed to help bridge the gap between the common man's thinking and that of the informed specialist on issues of public importance.

The polls dealt with such varied topics as Negro-white relations, world government, labor-management conflicts, public health insurance, inheritance of mental traits, etc. Each issue was submitted to a panel of some 75 to 100 experts designated as specially competent on the topic by a jury of their peers. The responses were summarized and reported anonymously in semi-popular monthly articles in a mass circulation magazine.

Many searching questions have been asked about this project, both with respect to its procedures and regarding its overall orientation. Since a number of these points have important bearing on the future of such specialized polls, they deserve discussion and a statement of whatever answers our material provides.

Prominent among the critical questions are these: (1) Do experts have the answers? Can they give any useful guidance on practical social issues? (2) Is it feasible to select a sample of most competent thinkers on a subject? Will not the results simply reflect the arbitrary selection of specialists? (3) Can poll questions succeed in obtaining adequate expressions of the experts' views? (4) Can a brief popular summary be accurate and meaningful? (5) Will not the published reports lead either to undemocratic submission to the "authoritative" views or to increased disrespect for so-called experts?

While no completely satisfactory reply can be given to such questions, they can be sufficiently well answered, I believe, to justify the conclusion that polls of experts can even now serve valuable social purposes alongisde the usual public opinion polls. Directions of further improvement will also be suggested.

11:55 A.M. The Use of the Community Self Survey in Combatting Discrimination. *Margot Haas and Stuart W. Cook, Commission on Community Interrelations of the American Jewish Congress.* (141)

The general method of the community survey has been adapted by Charles S. Johnson of Fisk University to the study of minority group problems. In Johnson's work there has been a steady trend toward maximizing the role of local community leaders in setting policies for the survey and the role of local volunteers in gathering and analyzing information. The survey thus becomes a community self survey of minority group problems. The people who participate in the survey learn about minority group problems at first hand. Usually they are startled by what they find, are are more ready to take positive steps toward improving living conditions and combatting discriminatory practices than they would be if the same information were presented to them as the findings of a group of experts from outside the community or the complaints of a minority group within the community. Cooperation of different ethnic groups in carrying out the survey provides a basis for further cooperation in taking action based on the results of the survey.

In a small Eastern industrial city CCI is attempting to develop the community self survey to the point where its findings will provide a reliable, quantitative, fairly comprehensive index of the amount of discrimination in that community against each minority group studied in the survey. Two types of discrimination are included in the index: (1) Exclusion of minority group members from areas of community life, and (2) differential treatment accorded to minority group members in areas where they are admitted. The minority groups being studied in this survey are Negroes and Jews, and the areas being investigated are employment, education, housing, community organizations, and public accommodations.

It is hoped that measurement of discrimination in this fashion will add to the educational value of community self surveys, will make possible an objective evaluation of progress made in a community over a period of years, and will aid in determining the effectiveness of various types of large scale anti-discrimination programs.

DIET AND EFFICIENCY

Program arranged by the Division of Physiological and Comparative Psychology

11:10 A.M., Friday, September 12

Bagley Room, Hotel Statler

DONALD B. LINDSLEY, Chairman

11:10 A.M. Recovery after 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-starvation in Man. Part I. Experimental Design and Physical Changes. *Josef Brozek, Joseph C. Franklin, Harold Guetzkow, and Ancel Keys, Laboratory of Physiological Hygiene, University of Minnesota.** (142)

The rehabilitation phase of the experiment was pre-

ceded by 6 months of semi-starvation during which the average weight of the 32 men decreased from 69.4 to 52.6 kg. The process of rehabilitation was studied in terms of a large array of anthropometric, biochemical, physiological, and psychological characteristics. Three "independent" variables were included in the experimental design: calories, proteins, and vitamins. There were 4 caloric groups, designated Z (zero supplement), L (low), G (good), and T (top), each group receiving 400 Cal. more than the preceding one. Within each caloric group of 8 men there were 4 "diet-pairs": 2 men with and 2 men without protein supplements, 2 men with and 2 men without vitamin supplements. The extra proteins were incorporated into foods, such as bread; every attempt was made to keep the diet for the protein-supplemented and non-supplemented group isocaloric. The vitamins were supplied in the form of pills, placebos being used for the unsupplemented subjects.

The recovery values, obtained as differences between rehabilitation and semi-starvation scores, for the two men in each diet pair were considered as "replicates"; the replicate variance, indicating the magnitude of the variation in the response of subjects maintained on identical dietary regimens, served as "experimental error" in computing the F-tests.

The average loss of body weight, d, in kg., for Z, L, G, and T group was −16.3, −17.7, −17.8, and −15.4; after 12 weeks of rehabilitation the average recovery values, i, were +3.4, +5.3, +7.3, and +8.8 kg., with increases in body weight closely paralleling the caloric intake. For the protein-unsupplemented, d = −17.4, i = +6.2, for the protein-supplemented d = −16.3, i = +6.2; for the vitamin unsupplemented d = −16.0, i = +6.4, for the vitamin supplemented d = −17.6, i = +6.0 kg.; neither the effect of the protein or vitamin supplements was statistically significant.

The calculated body fat decreased in semi-starvation by 6.6, 6.4, 8.0, and 6.2 kg.; in rehabilitation, the average recovery values for the four caloric groups, from lowest to highest, were 1.1, 2.7, 3.7, and 5.9 kg. The values for protein-unsuppl. were d = −7.6 and i = +3.8, prot.-suppl. d = −6.0, i = +2.9; for vit.-unsuppl. d = −5.8, i = +3.2, vit.-suppl. d = −7.8, i = +3.5, the differences being not significant.

11:25 A.M. Recovery After 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-starvation in Man. Part II. Motor, Sensory, and Intellective Functions. *Joseph C. Franklin, Josef Brozek, Harold Guetzkow and Ancel Keys, University of Minnesota.** (143)

In investigating voluntary motor performance, the components of strength, speed, coordination, and endurance were included in a battery of tests. Illustrative data will be given for the hand-dynamometer. In the caloric groups Z, L, G, and T the mean semi-starvation decrements, d, in kg., were −16.8, −18.0, −16.5, and −14.2; the rehabilitation scores indicated an average recovery of +2.6, +4.4, +7.8, and 6.8 kilograms, respectively. The changes in the protein-unsuppl. group amounted to d = −17.4, i = +6.1, in protein-suppl. d = −15.3, i = +4.7; in vit.-unsuppl. d = −16.0, i = +4.1, in vit.-suppl. d = −16.7, i = +6.7.

The back-dynamometer values show in a parallel fashion the effect of differential caloric levels, with the decrements (d) for Z, L, G, and T groups of −37.3, −65.1, −47.8, and −46.8 kilograms, and rehabilitation increments (i) of +2.0, +10.3, +21.7, and +15.9 kg., respectively.

The changes in speed and coordination were less marked and the rates of recovery did not differentiate well the dietary groups. On the other hand, the percentages of recovery in the test of endurance (running on a treadmill at 7.0 miles per hour and 8.6 per cent grade to exhaustion) paralleled the levels of caloric refeeding with d's in the group Z, L, G, and T of −192, −230, −167, and −177 seconds, and i's of +35, +75, +72, and +81, or a recovery of 18, 33, 43, and 46 per cent.

Because no significant deterioration was observed during semi-starvation in measured sensory functions, tests of visual acuity, flicker fusion frequency, and perceptual fluctuations were not made in rehabilitation period. Auditory acuity which increased in starvation returned after 12 weeks of rehabilitation close to the pre-starvation level, the change bearing no significant relationship to the specific nutritional factors.

Neither the scores on a battery of speed tests, modeled after Thurstones' tests of Primary Mental Abilities, nor Thorndike's C.A.V.D. indicated important changes in intellective functions resulting from semi-starvation. The battery of speed tests was continued in rehabilitation, without a change in the mean scores, thus confirming the conclusions reached on the basis of the starvation data alone. In the test of Crossing-out-4's, 18 one-minute trials were given at the end of semi-starvation and again in rehabilitation; there were no differences in the speed of learning.

11:40 A.M. Recovery After 12 Weeks of Controlled Nutritional Rehabilitation Following Experimental Semi-starvation in Man. Part III. Personality. *Harold Guetzkow, Josef Brozek, Joseph C. Franklin and Ancel Keys, University of Minnesota.** (144)

In semi-starvation the personality changes presented a picture of "neurasthenia", with weakness, easy fatigability, depression, and sense of being old as the prominent

symptoms. The scores on the Minnesota Multiphasic Personality Inventory rose markedly on the psychoneurotic scales of the inventory; with the "normal" population average of 50 and S.D. = 10, the mean standard scores for the 32 men increased from 45.7 in control to 63 at the end of the starvation period on the Hypochondriasis scale, from 54.2 to 73.4 on Depression scale, and from 59.0 to 70.0 on Hysteria scale; the mean scores after 12 weeks of refeeding were 54.1, 65.7, and 64.9, respectively.

The values for the Depression scale will be given in greater detail. The breakdown according to the dietary factors yields the following rehabilitation data: d's for Z, L, G, and T groups indicate in starvation an average increase of +22.8, +19.9, +19.1, and +16.8 units, with i's at the 12th week of rehabilitation of −2.2, −8.8, −9.8, and −12.1. The prot.-unsuppl. d = +17.1, i = −4.5, prot.-suppl. d = +22.2, i = −11.9; vit.-unsuppl. d = +19.0, i = −8.3, vit.-suppl. d = +20.2, i = −8.1. Because of the large variability in the response of the replicate subjects only very few differences reached a level of statistical significance. It is evident that the psychoneurotic changes induced by starvation were reversible, even though the recovery was slow.

Preoccupation with obsessive thoughts of food decreased much more rapidly than some of the ritualistic eating habits. For a short period during the early stages of rehabilitation, irritability and aggression were expressed more overtly and with greater intensity than at any time during starvation. There was a gradual widening of interests and revival of sexual urges which decreased to a very low level in starvation.

*This work was supported, in part, under the terms of a contract with the Office of Scientific Research and Development. The Sugar Research Foundation and the National Dairy Council also contributed funds. Support from other sources will be acknowledged in final publication.

11:55 A.M. The Sodium Chloride Preference of the White Rat in a Free-Choice Situation. *John K. Bare, Brown University.* (145)

PROBLEM: Richter has demonstrated the existence of a preference for sodium chloride solutions to water in white rats by means of the self-selection technique. The present study is an examination of this preference over a wider range of concentrations than previously reported.

POPULATION: 10 adult male rats (age, 300 days) of the Brown Colony, Wistar Stock.

PROCEDURE: The amount intake of sodium chloride solutions and water in a free-choice situation was measured twice daily over a period of 40 days, during which time the concentration of the salt solutions was systematically increased every second day. The amount of food fed each animal remained constant, and position habits and container preferences were controlled.

RESULTS: The preference threshold is 0.06% NaCl (P 0.01). The salt intake increases as the concentration of the solution increases, up to a maximum of 0.9%. With further increases in solution concentration, salt consumption decreases.

CONCLUSIONS: These results indicate that the ingestion of salt in a free-choice situation is a function of the strength of the salt stimulus, and that the maximal intake occurs with a solution the salt concentration of which is approximately equal to that of the blood. The relation of these results to the problems of self-regulatory mechanisms and specific hungers is discussed.

HUMAN EFFICIENCY

Program arranged by the Division of Military Psychology

11:10 A.M., Friday, September 12

English Room, Hotel Book-Cadillac

DON LEWIS, Chairman

11:10 A.M. Prediction and Automatic Control of Alertness. I. Experiments on Control of Lookout Alertness. *Roland C. Travis and John L. Kennedy, Tufts College.* (146)

PROBLEM: To determine the relation between action potentials and states of alertness and make use of action potentials to warn the subject of his condition.

POPULATION: Over two hundred simple reaction times (18 college students) were analyzed in conjunction with settings of the automatic awakener.

PROCEDURE: Action potentials from electrodes over supraorbital muscles were recorded together with stimulus and response on continuous tape as subjects responded to a periodic monotonous stimulus.

RESULTS: Lengthening of reaction time was associated with a reduction in the tension level. The reduction in the muscle tension level was in turn associated with warning alertness.

CONCLUSIONS: This new method of detecting levels of action potentials and automatically presenting a stimulus has promise in research on fatigue, drugs, and muscle tension phenomena.

11:25 A.M. Prediction and Automatic Control of Alertness. II. Experiments on Control of Alertness During a Continuous Tracking Performance. *John L. Kennedy and Roland C. Travis, Tufts College.* (147)

PROBLEM: To predict and monitor alertness in a continuous tracking situation by means of continuous recording of bioelectric potentials.

POPULATION: Twenty-three male college students.

PROCEDURE: Subjects continuously operated a hand tracking control in a unidimensional tracking task for 2–3 hour periods. Alertness was tested by measuring reaction time to the automatic presentation of a 25° peripheral warning light when the subject was at various levels of integrated total electrical energy output obtained through supraorbital electrodes.

RESULTS: Individual and group curves relating reaction time and energy output level will be presented. The data show that this measure of the condition of the organism may be used to operate a warning signal before dangerous levels of inalertness are reached.

CONCLUSIONS: These results suggest the possibility of exercising automatic control over the alertness status of truck drivers, pilots and other personnel engaged in long, monotonous and fatiguing tasks.

11:40 A.M. The Evaluation of a Psycho-motor Task For Use in the Study of Warning Signals. *Robert Y. Walker, University of Maryland, W. Guy Matheny and John K. Hemphill.* (148)

PROBLEM: To evaluate a simple psycho-motor pursuit test as a problem to be used in studying the effect of warning signals on the performance of a task. The psycho-motor test and warning signals are similar to those in standard aircraft.

POPULATION: Sixteen subjects; eight were experienced pilots averaging over 750 hours of military flying, eight with no flight experience or knowledge of flying problems or procedures. All subjects between the ages of 18 and 28.

PROCEDURE: The effect of seven variables on the performance of the test was studied by means of an experimental design employing analysis of variance. Subjects were administered four hours and forty-five minutes of practice with interspersed rest periods.

RESULTS: The reliability of the test as estimated by analysis of variance technique (Hoyt) was .82 when estimated between trials, and .92 when estimated between individuals. None of the seven variables produced a significant effect upon the performance of the basic test. There was no appreciable change on total performance or performance within individual trials on the test as a result of continued practice. "t" between 30-second periods in which signals were received and 30-second periods in which they were not received is 2.22 ($P = .05$).

CONCLUSIONS: The test seems to fulfill some of the established requirements for a task upon which to evaluate the effect of different types of warning signals. This is shown by there being no change in performance as a result of practice; it is reasonably reliable; it is unaffected by length of rest or practice periods within the limits set up in the experiment; it is not affected by the set of the subject; it is not affected by previous experience of the individual; nor is it affected by the particular pattern of signals. There is some indication from the analysis that the signal order, i.e., whether the signal is introduced in the first trial or the second trial, affects performance. The test shows some sensitivity to disruption by a warning signal so that different types of signals may be assessed by this relative effect on performance on the basic test.

11:55 A.M. An Initial Study of Principles Related to Aircrew Workplace Layout. *H. Richard Van Saun, Aero Medical Laboratory, Wright Field.* (149)

PROBLEM: This investigation is an initial study of certain aspects of aircrew workplace layout undertaken with a view to discovering basic relationships between workplace layout and aircrew efficiency.

POPULATION: Ten members of the Aero Medical Laboratory served as subjects.

PROCEDURE: The primary variable under investigation was the spatial relation between stimulus and response aspects of a task. The effect on subject performance of varying this relation was assayed by means of a psycho-physical reaction time technique. Subjects were first trained in a visual reaction time task to a criterion of stability of performance. Reaction times were then obtained under the several arrangements of stimulus and response.

RESULTS: Results of the study indicated that certain spatial relationships of stimulus and response aspects of the task are superior to others in terms of operator efficiency.

CONCLUSIONS: Hypotheses concerning efficient aircrew workplace layout are suggested by this research.

MEASUREMENT OF SOCIAL BEHAVIOR

1:40 P.M., Friday, September 12

Banquet Room, Hotel Statler

O. H. MOWRER, Chairman

1:40 P.M. The Scale-Discrimination Method for Measuring Social Attitudes. *Allen L. Edwards and Franklin P. Kilpatrick, University of Washington.* (150)

PROBLEM: A synthesis of current methods of attitude scale construction (Thurstone's "method of equal appearing intervals," Likert's "method of summated ratings," Guttman's "method of scale analysis") in order to develop a technique which makes use of the best features of each method and, at the same time, overcomes the objections to the methods considered separately.

PROCEDURE: Over 300 items of opinion toward science were collected. After editing, 168 items were found to be satisfactory in terms of customary standards. Items were printed on 2x4 cards and sorted into 3 categories ("favorable," "neutral," "unfavorable") by 98 subjects. At a second session, the items in each category were sorted into three additional categories. Scale (S) and Q values were determined from the judgments of 82 of the 98 subjects. Q values were plotted against S values and a line was drawn to eliminate all items with Q values above 1.25. The remaining 83 items were given to over 300 subjects who reacted to each one on a six point scale. Scores were determined by the method of summated ratings. Phi coefficients for the items were determined by using the upper and lower 27% of the group. Phi coefficients were plotted against scale values and selection of items for the final scales was made in terms of phi coefficients within each scale category.

RESULTS: It has been demonstrated that not all items with satisfactory S and Q values will discriminate between those with opposed attitudes. Some items fail to be endorsed by any subjects and others are endorsed by subjects at opposite extremes of the continuum. The method of equal appearing intervals alone provides no basis for the selection of such items. The method of summated ratings used in conjunction with the method of equal appearing intervals (the scale-discrimination method) results in an attitude scale with the following advantages: items can be assigned positions on a continuum; each item contributes to the total score; the items meet the requirements of Guttman's theory of "scale analysis."

1:55 P.M. The Consistency and Generality of Ratings of "Social Aggressiveness" Made from Observation of Role Playing Situations. *Julian B. Rotter and Delos D. Wickens, Ohio State University.* (151)

PROBLEM: Role playing, psychodrama or improvisations used as a diagnostic technique for measuring personality and attitudes, is finding its way into a variety of fields of psychology. The opportunity for direct observation of behavior makes the method of great potential usefulness. The present study is an exploratory one which aimed to discover the conditions under which reliable judgments of 'social aggressiveness' can be made in a single situation and from one situation to another.

POPULATION: The subjects were 48 male college students selected on a volunteer basis from the elementary psychology course.

PROCEDURE: Fourteen judges were divided into four teams and made ratings on students playing four different roles in two equivalent situations. Sequence of roles was systematically varied. Each student played two roles and the effect of different roles, sequence of roles, and partners in the roles were studied. Two teams of judges rated the student only upon observation of a single role while two other teams watched and rated the students in both roles.

RESULTS: Initial exploratory work indicated that the role itself could be a heavy determiner of the rating. When subject A played a situation with subject B, frequently a 'social climate' was produced which affected a second similar situation in which the same subjects played reversed roles. The absence of specific criteria as referents for a definition of 'social aggressiveness' produced unreliable ratings. It was found that elimination of the difficulties stated above led to high inter-rater correlation for observations of a single situation and reasonably high correlation of judges rating in one situation with judges rating in a second, different situation.

CONCLUSIONS: The selection of the specific roles, the specificity of criteria for rating, and the partners in reversed role playing situation may all affect the ratings of trained judges. When these variables are controlled it is possible to obtain consistent ratings in a single situation and moderately reliable ratings from one situation to another.

2:10 P.M. Method for Establishing Leadership Criteria. *Albert C. VanDusen, Northwestern University.* (152)

PROBLEM: To determine specific leadership criteria of Boy Scouts by using a nominating technique with direct interviews.

POPULATION: Nine Boy Scout troops, a total of 222 scouts, were investigated. All troops had about 20 members except one which had 51. The Boy Scouts have the advantage of a uniform hierarchy of leadership positions.

PROCEDURE: Each scout nominated (a) the three boys who would make the best patrol leaders and (b) the three who would make the worst. Specific reasons were given for each. The one best and one worst leader of all the troops made up the criterion groups. Most of the reasons given for these nominations were clarified by direct interviews. All reasons were transferred to cards and categorized by the 18 investigators by majority vote. Reasons were tabulated and grouped into meaningful clusters.

RESULTS: Specific reasons for *best* and *worst* potential leaders were grouped into 37 and 26 categories respectively. The most often mentioned reasons for *best* may be labeled: experience in scouting, helpfulness,

friendliness, and takes scouting seriously. A similar list for *worst* includes: lacks interest in scouting, doesn't cooperate, bad temper—irritable, and fools around too much.

Antonyms for operational descriptions of best and worst leaders are suggested by the results. Scouts tend to agree on reasons given for nominating a given individual.

CONCLUSIONS: Results suggests that the nominating technique can be used to advantage in identifying leaders and non-leaders of the Boy Scouts and of other kinds of organizations.

Analysis of reasons given for the nominations, as probed through interviews, has shown that this method can yield specific criteria of leadership.

2:25 P.M. Measuring Leadership in College Women by Free Association. *Katharine M. Maurer, College of Agriculture, Univ. of Nebraska.* (153)

PROBLEM: The purpose of this study was to test the validity of the *leadership* key of the Goodenough Speed-of-Association Test for use with college women, by comparing the scores of a group known as leaders in campus organizations with those of a group who had shown no evidence of leadership while in college. It was hoped that this might lead to discovery of personality differences between leaders and non-leaders. In addition, an effort was made to study trait resemblances and differences between the contrasted groups and other members of their families.

POPULATION: Fifty college women, selected as leaders on the basis of holding elective offices in campus organizations, were matched with non-leaders for residence in city, farm, or rural non-farm home; sophomore, junior, or senior status; and age.

PROCEDURE: The Speed-of-Association Test, given to both groups and to other members of the families of three-fifths of the leaders and one-third of the non-leaders, has keys for *masculinity-femininity*, *leadership* and *commonality*. Family data on a normative group were available for comparison. The leaders were rated by three associates on a scale of leadership and social participation constructed for the purpose. Other data for both groups were college entrance tests, credits earned, and grade averages.

RESULTS: The per cent of overlap between the scores of leaders and non-leaders, and critical ratios between mean scores of the two groups were computed. Relationships between ratings and *leadership* scores, and between scores on different keys and between different groups were analyzed by use of various correlational techniques.

Leaders and non-leaders differed significantly on *leadership* and *commonality* scores but not on *masculinity-femininity*, and scores on *leadership* and *commonality* were positively correlated. Ratings by associates were positively correlated with *leadership* scores. Leaders had significantly higher scores on both entrance tests (English Usage, and the "linguistic" portion of the 1937 ACE). The groups had earned approximately equal numbers of credits but leaders had significantly higher grade averages. Relationships between the scores of college women and those of their families are suggestive of hypotheses for further study. Qualitative differences between the test responses of leaders and non-leaders are suggestive of personality traits associated with leadership.

CONCLUSIONS: The *leadership* key of the Speed-of-Association Test measures leadership as it is exhibited in the extracurricular activities of college women, and as it is recognized in ratings by associates. This free association test appears to be a promising instrument for the measurement of personality differences in the normal population.

Verbal facility and the ability to express thoughts in the language of the social group are characteristic of college leaders. They earn the same number of credits as non-leaders, with higher grades, in addition to taking a more active part in campus affairs. Leaders appear to possess distinguishing individual and family characteristics.

SYMPOSIUM: PROBLEMS OF STATISTICAL METHOD IN CURRENT CLINICAL RESEARCH

Sponsored jointly by the Psychometric Society and the Division of Clinical and Abnormal Psychology

2:00 P.M., Friday, September 12

Crystal Ballroom, Hotel Book-Cadillac

This symposium undertakes to bring clinical psychologists and psychological statisticians together for a joint discussion of the statistical problems which arise in analysing the data of clinical research. The clinicians will describe the types of investigations which they are carrying out, and the statisticians will suggest statistical procedures most appropriate for those problems.

E. LOWELL KELLY, Chairman

Statistical participants: PHILLIP J. RULON and ROBERT M. W. TRAVERS

Clinical Participants: DANIEL HORN and ROBERT HOLT

SYMPOSIUM: CRITIQUE OF EXPERIMENTAL PSYCHOLOGY'S CONTRIBUTION TO EQUIPMENT DESIGN FOR HUMAN USE

Sponsored by the Division of Military Psychology

2:00 P.M., Friday, September 12

Italian Garden, Hotel Book-Cadillac

Equipment design is an area of applied psychology given great impetus by the recent war. Experimental psychology will be critically evaluated as a basic science in terms of the success with which its data and methods can be used to provide answers to problems in this relatively new applied area.

CHARLES W. BRAY, Chairman

Participants: CLIFFORD P. SEITZ, LLOYD V. SEARLE, JOHN L. KENNEDY, S. S. STEVENS, PAUL M. FITTS, JACK W. DUNLAP, and WENDELL R. GARNER

SYMPOSIUM: METHODOLOGICAL PROBLEMS IN RESEARCH ON MATURITY AND OLD AGE

Sponsored by the Division on Maturity and Old Age

2:00 P.M., Friday, September 12

English Room, Hotel Book-Cadillac

Special problems of methodology and interpretation arise in psychological research on older age groups. The participants in this symposium will identify the major problems encountered, and discuss the solutions which in their experience have proved most effective.

IRVING LORGE, Chairman

Speakers: WALTER R. MILES and HAROLD E. JONES
Panel: HERBERT S. CONRAD, N. W. SHOCK, and DAVID WECHSLER

SOCIAL PSYCHOLOGY

2:50 P.M., Friday, September 12

Banquet Room, Hotel Statler

STUART H. BRITT, Chairman

2:50 P.M. The Observational Method in Radio Audience Measurement. *Martin D. Kaplon, Hyattsville, Maryland.* (154)

PROBLEM: This study was designed to accomplish two objectives: first, by means of the observational method, to find out what people actually do while they listen to the radio, and second, to compare what people actually do with what some of the currently available audience measurement methods imply that people do.

POPULATION: One hundred and forty five students observed the listening behavior of 254 radio listeners for a total of 7620 minutes of radio listening.

PROCEDURE: All observing was done by students in their normal home situations. For each minute of observation, the observers recorded the actual behavior of the observees and also estimated along a three point scale the degree to which the observees were listening. Coincidental telephone interviews were conducted in some of the homes while observations were being made, and thus provided a basis for comparing information recorded by observers with information reported by telephone respondents.

RESULTS: A measure of the attention-holding power of a program was obtained by determining the total number of minutes during which the audience listened attentively, listened casually, and did not listen. Minute-by-minute degree of listening was expressed in the form of program profiles which, when compared with radio scripts, revealed in detail the specific portions of programs which were listened to with varying amounts of attention. The reliability of the estimates of degree of listening was established by five independent checks. Analysis of the actual behavior of the listeners revealed statistically significant program and sex differences.

In an observational method-coincidental telephone method cross check, it was found that reports of audience size based upon telephone responses did not even approximate perfect agreement with those based on direct observation. This suggests that the so-called coincidental method does not accurately reflect coincidental listening. The observation data pointed also to the conclusion that tuning and listening behavior are different enough to cast some doubt on the validity of the A. C. Neilson Audimeter technique.

CONCLUSIONS: The observational method can provide on a practicable basis certain otherwise unobtainable information which should be of real value to those people in the radio industry who are responsible for producing, improving, and evaluating radio programs.

In addition, the observational method can provide criterion data with which to make large scale appraisals of the Hooper, Neilson, and other currently available radio audience measurement methods.

3:05 P.M. The Psychological Dimensions of Groups. *Raymond B. Cattell, University of Illinois.* (155)

PROBLEM: To discover the chief vectors by which the behavior of groups may be defined and measured.

POPULATION: 126 women students in 21 groups of 6 each.

PROCEDURE: Each group measured as to the group behavior in each of forty test situations. The forty tests are intercorrelated and factorized.

RESULTS: The correlation matrix yielded five or six factors, with which it was possible to obtain simple structure as readily as with correlations on individuals. Being based on few cases these factors are necessarily tentative. It is more practicable, owing to the difficulties of experiments with interacting groups, to seek confirmation through repetition of the whole experiment by other experimenters than by seeking to increase the number of groups.

CONCLUSIONS: The behavior of groups *per se*, as distinct from the average behavior characteristics of the component individuals, is of consistent and definable nature. Five of the factors are readily interpretable in terms of group ability, group morale, group dominance, etc.

3:20 P.M. Studies in the Development of Democratic Concepts and Behavior. *George W. Hartmann, Teachers College, Columbia University.* (156)

PROBLEM: To determine how the average child grows in his understanding and use of the democratic idea and to ascertain with what factors various levels of democratic conduct are correlated.

POPULATION: Elementary and secondary pupils from all 12 school grades and adults in the same communities.

PROCEDURE: Systematic interviews, questionnaires, and prolonged observations in four different communities and school systems in New York and New Jersey.

RESULTS: In the free association test to the stimulus word "democracy," adults ranked below high-school students in the proportion of insightful responses. There is a steady increase in the number of significant words used from one in Grade III to eleven in Grade IX. Abstract or generalized terms like "freedom" are preferred to concrete words like "vote".

When asked to identify their "most democratic" pupils, teachers nominate individuals in the upper academic fifth of the class; the "most undemocratic" cluster in the bottom fourth.

The school children as a group tended to look upon racial and religious intolerance as the most characteristic form of undemocratic behavior indulged in by themselves and others.

CONCLUSIONS: The American educational system tends to identify the democratic personality with any manifestation of preferred behavior, e.g., teachers designate as undemocratic pupils who come late to school or expose themselves to discipline. An over-all "halo effect" appears to be operative. Children themselves accept these norms and view "democracy" and "superior morality" as one and the same.

3:35 P.M. Personal Incidents: A Study of the Effectiveness of Various Types of Answers to Anti-Minority Remarks. *John Harding, Abraham F. Citron, and Claire Selltiz, Commission on Community Interrelations of the American Jewish Congress* (157)

PROBLEM: This research is concerned with the type of "personal incident" which occurs in a public place and involves people who were previously unacquainted with each other. The purpose of the research is to determine the effect upon bystanders of an anti-minority remark and of various types of answers to it.

POPULATION: The population studied consists of 1139 adults in New York City, 92 in Newark, N. J., and 67 in Peoria, Illinois. For the study they were assembled in groups of 15 to 30 individuals each.

PROCEDURE: The procedure followed in all groups was to present a brief dramatization of an incident involving an anti-Semitic remark, which was answered in two or more different ways. The different responses to the remark included: (1) an answer emphasizing the American tradition of fair play and equal treatment for all groups. (2) an answer stressing the fact of individual differences and the inaccuracy of generalizations about Jews as a group, (3) no answer at all. Each answer was presented in either a calm, quiet or an excited, militant manner.

All individuals studied indicated on a written ballot which answer they preferred. In addition 144 were interviewed individually to determine the basis for their preference and 520 were tested for attitude change with brief attitude scales which they filled out at the beginning of the playlet and again several times during its course.

RESULTS: The results show that a calm, quiet answer is generally preferred to an excited, militant one. The content of the answer has no significant effect upon preference. The American tradition answer produces a small but statistically reliable average change in attitudes in the pro-Semitic direction. This is equally true whether the answer is made by an individual identified as Jewish or as non-Jewish. The average effect of the individual differences answer was a slight change of attitudes in the anti-Semitic direction, but this change is not statistically reliable. The manner in which an answer is presented has no significant influence on whether or not it changes attitudes.

The interpretation of these results will be discussed

BRAIN FUNCTION

Program arranged by the Division of Physiological and Comparative Psychology

2:50 P.M., Friday, September 12

Bagley Room, Hotel Statler

CARLYLE F. JACOBSEN, Chairman

2:50 P.M. Physiological and Psychological Factors in Electroencephalography. *T. Cunliffe Barnes, Hahnemann Medical College.* (158)

PROBLEM: The aim of this investigation was to aid interpretation of electro-encephalograms by psychological and physiological tests.

POPULATION: The 300 persons studied were mostly hospitalized; 60% were epileptics; 20% were normal students.

PROCEDURE: The physiological procedure consisted of 6 channel EEG recording, pneumograms, determination of blood sugar and skin temperature. The psychological tests included the Bell Adjustment Inventory, Cornell Index, Hunt Test for Cerebral Damage and Rorschach.

RESULTS: The Bell scores showed that a good adjustment was associated with the ability to maintain normal EEG during deep breathing. The Cerebral Hyperventilation Index or C.H.I. (J. Psychol., 22: 67, 1946) is plus for normal waves and minus for abnormal waves in acapnia. Excellent personality scores had average C.H.I. of $+ 4.5 \pm 0.59$ and unsatisfactory personality scores had C.H.I. of -0.89 ± 0.83. Although epileptics had minus C.H.I. values good personality was found with less severe waves in acapnia. In 46 patients 23 with abnormal EEG had average borderline Hunt score of 62 and 23 with normal EEG had an average Hunt score of 54. Very abnormal (3 per sec.) brain waves were seen with high Hunt scores and stereotyped Rorschach. Attempts to relate visual imagery with fast occipital waves will be reported.

CONCLUSIONS: Results suggest that EEG should not be taken without psychological and physiological tests.

The procedure was developed with the aid of Marie D. Amoroso.

3:05 P.M. Critical Fusion Frequency and Prefrontal Lobes in Man. *Ward C. Halstead, University of Chicago.* (159)

PROBLEM: To compare the critical fusion frequency, and the intra-individual variance thereof, for a low level (0.1 ml.) intermittent light source in frontal lobectomies, non-frontal lobectomies, and normal individuals.

POPULATION: 25 carefully selected patients with frontal lobectomies; 21 carefully selected patients with non-frontal lobectomies; 30 subjects carefully selected to control such factors as age, sex, I. Q., nationality, education, general health, intactness of the brain, and visual acuity.

PROCEDURE: Ten determinations in a single session of C.F.F. were made for each subject by means of an electronic apparatus which is described in the paper. The first five trials were given to permit the grasp of instructions, establishment of a judgment criterion, and a test level of light adaptation. The second five trials were regarded as the test proper. The average of these was taken as the final measurement and their average deviation as a measure of dispersion.

RESULTS: The average C.F.F. (in cycles per second) of patients with frontal lobectomies was found to be reliably lower than that of normal individuals ($P < .001$) or for non-frontal lobectomies with a comparable mass of brain tissue removed ($P < .001$). The average deviation in C.F.F. for frontal lobectomies was found to be reliably *lower* than that of normal individuals ($P < .001$) or of non-frontal lobectomies ($P < .001$).

CONCLUSIONS: 1). Critical fusion frequency of intermittent light, widely regarded as a retinal affair, is altered by lesions of the central nervous system. 2). Lesions back of the frontal lobes lower C.F.F. but do not alter the dispersion. 3). Prefrontal lobe lesions lower C.F.F. to a greater extent than in 2) and in addition *decrease* the dispersion.

3:20 P.M. "Forced" Rotation Produced by Cortical Lesions in the Dog. *W. N. Kellogg, Indiana University.* (160)

Eighteen cases of complete or nearly complete hemidecortication in the dog indicate the following as the syndrome for this type of brain lesion.

1. Bizarre postures are assumed by the limbs on the side opposite to the operation.

2. Certain of the reflexes on the contralateral side are also affected.

3. The animal suffers from hemianopsia due to the removal of the occipital pole, and for a time has difficulty in orienting himself amid familiar surroundings.

4. If the weight is removed from the feet, the limbs contralateral to the lesion, stiffen in hemidecorticate rigidity.

5. Most striking of all the effects produced, however, is the change in locomotion. The animal is completely unable to travel in a straight line, but turns continually in circles of small diameter. If left alone out of doors he may circle without stopping—but he nevertheless remains in the same spot. Movement from one locale to another appears to be impossible. These "forced" rotations are always in the same direction as the lesion, i.e., the operated side is on the inside of the circle.

A series of control operations on seven additional animals—both lobectomies and lobotomies of the Freeman and Watts type—establishes without a doubt that the basic cause for these rotations is not visual (or sensory), but motor in origin. The evidence points again to the influence of the frontal and prefrontal regions in behavior, although specific localization for the rotating

movements, as for example in area 8, has not been established. The relationship to similar "circus movements" reported in other sorts of preparations and in man will be discussed.

ANNUAL REPORT TO APA MEMBERS

4:00 P.M., Friday, September 12

Banquet Room, Hotel Statler

CARL R. ROGERS, Chairman

Report of the Council of Representatives: HELEN PEAK

Report of the Executive Secretary for 1947: DAEL WOLFLE.

DIVISION ON MATURITY AND OLD AGE

7:00 P.M., Friday, September 12

Founders Room, Hotel Book-Cadillac

Presidential Address:

SIDNEY L. PRESSEY, "The Division on Maturity and Old Age; Its History and Potential Service."

INVITED ADDRESS

8:15 P.M., Friday, September 12

Rackham Memorial Building

RALPH M. EVANS

DONALD G. MARQUIS, Chairman

SATURDAY, SEPTEMBER 13

INDUSTRIAL PSYCHOLOGY

Program arranged by the Division of Industrial and Business Psychology

8:50 A.M., Saturday, September 13

Banquet Room, Hotel Statler

MORRIS S. VITELES, Chairman

8:50 A.M. Resistance to Psychological Programs in Industrial Organizations. *Bernard J. Covner, The Berger Brothers Company and Wesleyan University.* (161)

A challenging problem in modern industrial society is the evoking of change without provoking resistance. Well established psychological procedures offer a promising approach to the solving of personnel problems in industrial organizations. They are of little use to the staff or consulting psychologist, however, unless he also acquires certain techniques which aid him in establishing and maintaining effective working relationships with the organization in question. To date such "relationship techniques" have received practically no formal attention in the training of industrial psychologists. Failure to use these techniques may result in resistance to the psychologist, failure of the organization to assimilate changes which are planned for it, as well as ill will toward psychologists in general.

Examples of resistance encountered in industrial work will be presented. Three sources of resistance will be analyzed: organizational personnel with whom the psychologist comes into contact, the situation, and the psychologist himself. Several ways of preventing and handling resistance will be suggested, including interview and group participation techniques. Application of these techniques to getting started on an industrial project, preparing materials and putting them to use, making suggestions, etc. will be discussed.

9:05 A.M. Development and Evaluation of Methods for Personnel Turnover Control. *Roger M. Bellows and Charles E. Scholl, Jr., Wayne University.* (162)

PROBLEM: To develop and evaluate a method for selection of female applicants who were not turnover prone for use in jobs in a pharmaceutical factory.

POPULATION: Follow-back study, on which a turnover prediction score was developed and evaluated: 150 female employees.

Follow-up study on which turnover control method was checked: approx. 525 employees.

PROCEDURE: A priori selection of trial turnover predictor items; collection of data in follow-back study; verification of several predictors; combination of predictors by Wherry-Doolittle method; installation of device for follow-up study.

RESULTS: In the follow-back study, employment record was the best single predictor yielding a coeff. of corr. of +.39. A multiple r of +.50 was obtained by statistical combination of items (employment record, marital status and a test score) for a 6 months period.

Some results on follow-up of hired applicants are given.

CONCLUSIONS: If the turnover score continues to work in the follow-up situation as well as the experimental situation, 69% of the defined turnover prone employees could be eliminated by selecting the top 50% of applicants in terms of turnover scores.

9:20 A.M. The Use and Results of Instructional Demonstrations for Supervisory Training Groups. *John F. Humes, University of Illinois.* (163)

PROBLEM: The purpose of this study is to describe a method, employed in supervisory training classes, which illustrates the effect of task-instruction upon performance; and to indicate analogies to actual work situations.

POPULATION: Data used in this study were collected from 575 industrial foremen, although more than twice that

number participated in experiments varying slightly in the method described, and all were given the benefit of interpretations.

PROCEDURE: Ten Roberts Number Sheets (numbers, 1 to 60, haphazardly arranged on 8½ x 11 sheets of white paper) were distributed to every member of the training groups. The task was to connect by pencil lines as many numbers as possible in proper sequence under standard time limits. Completely adequate instructions were given to group A. Inadequate instructions were given to group B. After 6 trials under inadequate instructions, additional information was given group C.

RESULTS: Quantitative results show group A to be 42.4% superior to Group B in terms of total mean "production" after 10 trials and 30.0% superior to group C.

Groups B and C are approximately equal in performance until the 8th trial when the mean "production" of group C exceeds that of group B by 25%. But when total mean results are computed C is but 9.3% superior to B. Additional instruction after 6 trials by group C results in an immediate retardation of production until trial 8.

CONCLUSIONS: The primary objective of the techniques employed was to illustrate variations in "production" as related to adequacy of procedural instructions. This purpose was accomplished; and in addition, the familiar characteristics of learning were demonstrated. Specific industrial analogies can readily be drawn from the derived results. In training operators for jobs, instructions should include all items necessary for desired production. Otherwise, inefficiency results both in terms of production-loss and time expenditure, with the probability of negative effects on worker morale.

9:35 A.M. The Reliability of Two Job Evaluation Systems. *C. H. Lawshe, Purdue University.* (164)

PROBLEM: To provide estimates of the reliability of total point ratings obtained by two job evaluation methods and to provide estimates of the reliability of the component items in each system.

POPULATION: Twenty men presently engaged in job evaluation work cooperated by rating the job descriptions utilized.

PROCEDURE: Extensive job descriptions of forty jobs were submitted to the analysts along with directions for rating the jobs. The design was such that each job description was rated by five independent judges according to the NEMA system and by another five independent judges by a newly devised simplified system. Mean ratings for total points and component items for each system were computed along with reliability estimates.

CONCLUSIONS: 1. The Simplified System demonstrated a higher reliability (.89—one rater, .98—five raters) than the NEMA system (.77—one rater, .94—five raters).

2. A strikingly similar pattern of reliabilities was shown by the individual scales within the two systems with the "skill" measuring items showing relatively high reliability and all other items showing relatively low reliability.

3. The four individual items in the Simplified System showed consistently higher reliability than their counterpart scales in the NEMA system and five of the NEMA items yielded lower reliabilities than the least reliable Simplified item.

4. The Simplified System total point reliability was higher than the reliability of any one of its component items while the NEMA total point reliability was lower than the reliability of two of its component items.

5. The low reliabilities of the items, other than the skill measuring scales, reflects the need for more objective rating criteria for these elements, care in the construction of these items and the degree definitions, and indicates the probable advantage of training raters in the use of these scales.

6. The results of this study demonstrate that a system employing a few items is not necessarily less reliable than a widely accepted system employing a greater number of tems.

MOTOR PROBLEMS IN EQUIPMENT DESIGN

Program arranged by the Division of Military Psychology

8:50 A.M., Saturday, September 13

Michigan Room, Hotel Statler

W. J. BROGDEN, Chairman

8:50 A.M. Wave Length and Amplitude Characteristics of Tracking Error Curves. *D. G. Ellson, Harris Hill and Florence Gray, Indiana University.* (165)

PROBLEM: To measure wave length and amplitude characteristics of tracking error curves as a function of target rate.

POPULATION: Ten male college students.

PROCEDURE: Tracking error curves were obtained during 16 days practice in tracking a target moving in a single dimension at constant rates. Five rates ranging from 5°/sec. to 25°/sec. were presented in balanced order.

RESULTS: Two types of tracking were identified: (a) "rate tracking," in which the position error was small and relatively constant, and the target rate was matched closely for variable lengths of time; and (b) "position correction tracking" in which the position error was large and variable and was corrected by sine-form waves of relatively constant wave length. In position correction tracking, which accounts for most of the actual

tracking error, wave amplitude is approximately proportional to target speed, while the wave length of individual corrections remains almost constant. A small but statistically significant relationship was found between wave amplitude and wave length, the latter increasing approximately 50% with a 10 to 1 increase in wave amplitude.

CONCLUSIONS: In tracking a target moving at constant rates in a single dimension, the time required to make a correction of position (wave length) is relatively stable, remaining constant with target speed and relatively constant with the amplitude of the correction movement. Tracking error and the consequent amplitude of corrections (wave amplitude) varies markedly with target speed.

This report presents research carried out at Indiana University for the Aero Medical Laboratory, Engineering Division, Air Materiel Command under Contract # W 33-038, ac-13968.

9:05 A.M. A Study of the Acceleration Pattern of Manual Corrective Responses. *Franklin V. Taylor, Naval Research Laboratory.* (166)

PROBLEM: This study was designed to shed further light on the nature of motions made to correct suddenly introduced errors. A previous study by the Psychology Section of the Naval Research Laboratory has shown that the rate of the correction motion increases with the size of the error. In this present study, the acceleration and third derivative patterns of these motions are examined.

POPULATION: Ten members of the Psychology Section were used as subjects.

PROCEDURE: Through the use of an electronic device, a target is presented on the face of a cathode ray tube. This target is suddenly displaced either to the right or left by a fixed amount. The subject tracks the target with a joy stick which positions a potentiometer and which carried an accelerometer. Photographic records are taken of cathode ray tube representations of joy stick position and the first, second and third derivatives of position.

RESULTS: When the first, second and third derivatives of simple correction motions are examined considerable variation is found between individuals. Furthermore, an individual's acceleration pattern for an excursion of given size is by no means identical each time it is repeated. However, when variability is reduced by selecting only those responses with no over-shoots or under-shoots, certain facts emerge. It appears that, contrary to some previous reports, there are no extended periods of constant rate or constant acceleration. Rather, the data show that the correction pattern consists of acceleration at an increasing rate, then at a decreasing rate, followed immediately by deceleration at an increasing rate and then at a decreasing rate. In general the deceleration takes longer than the acceleration.

CONCLUSIONS: Contrary to some earlier conjectures, the correction motion made in response to suddenly introduced errors does not consist of a period of acceleration followed by a period of constant rate, followed by deceleration. Rather, a varying rate of acceleration changes instantaneously into a varying rate of deceleration with no interval of constant rate intervening. This seems to signify that the correction response cannot properly be considered as a ballistic motion.

9:20 A.M. A Study of Several Design Factors Influencing Human Efficiency in Hand and Foot Operation of Controls. *Walter F. Grether, Aero Medical Laboratory, Wright Field.* (167)

PROBLEM: An investigation was carried out to determine the effects upon human efficiency of several variations in the type of movement employed to perform a simple pursuit task.

POPULATION: The subjects used in this study were 36 rated military pilots and 24 other men with miscellaneous training and experience.

PROCEDURE: Any one of five control motions could be used to compensate for the movements of a pointer of a pursuit test. These control motions were reciprocating rudder pedal action, lateral stick movement, longitudinal (fore and aft) stick movement, rotary wheel movement, and longitudinal wheel movement. Tests were made of the efficiency with which the pursuit test could be controlled with each of these five motions independently with equal and non-equal extent of movement. Additional tests were run using rudder pedal and fore and aft wheel movement with three conditions of leg and arm flexion.

RESULTS: Performance with the rudder pedals was significantly poorer than with any of the hand operated controls. Lateral and rotary hand movements were slightly less efficient than fore and aft movements. These results held true for both the equal and unequal extent of movement conditions. The variations in arm and leg flexion had no significant effect upon efficiency of performance even though marked differences in comfort were reported by the subjects.

CONCLUSIONS: It is concluded that (1) foot control is less efficient than hand control, (2) lateral and rotary movements of the hands are less efficient than fore and aft movements, and (3) conditions of arm and leg flexion sufficient to cause considerable differences in comfort will not necessarily cause differences in efficiency of performance.

9:35 A.M. A Study of Proprioceptive Location Discrimination as Indicated by Arm-Hand Positioning Reactions. *Paul M. Fitts, Aero Medical Laboratory, Wright Field.* (168)

PROBLEM: Accurate arm-hand positioning reactions, mediated through proprioceptive location discrimination, are essential components of many motor skills. Information concerning the accuracy of these reactions is of general theoretical interest and has application to problems such as the design and placement of machine controls.

POPULATION: Seventy superior adult males (50 AAF pilots and 20 college students) were used as subjects.

PROCEDURE: In the first experiment 50 subjects (pilots) were tested for 1 session during which they reached for and marked designated targets located in 20 different areas and at distances of 30 inches around a reference point at the shoulders. Vision of the body and of the targets was excluded. In the second experiment 20 subjects (students) were tested with a similar apparatus and procedure on 12 different days. Subjects always were given 10 trials on each target during each test session, and received knowledge of results after each response.

RESULTS: Accuracy of positioning reactions was found to be significantly different for the different areas. The most accurate discrimination was for the area directly forward at shoulder level, to which the average positioning error was 4 degrees. Poorest discrimination was for areas 45 degrees upward and 135 degrees backward on either side. Variable errors decreased during the 12 practice periods. Constant errors were less subject to improvement with training.

CONCLUSIONS: It is concluded that accuracy of location discrimination is related to the area to which a positioning reaction is made, that variable positioning errors can be reduced substantially by practice, that relatively stable constant error patterns exist, and that there is a high degree of mirroring between error patterns for corresponding right- and left-hand targets. Several hypotheses with regard to location discrimination functions are formulated on the basis of the findings.

MORALE AND HUMAN SATISFACTION

10:00 A.M., Saturday, September 13

Banquet Room, Hotel Statler

JAY L. OTIS, Chairman

10:00 A.M. Construction and Standardization of the Army Activities Preference Blank. *Charles P. Sparks, Personnel Research Section, AGO.* (169)

PROBLEM: To develop a tool based on Army occupational structure which would identify interests of enlisted men for Army jobs. To determine whether test technicians familiar with the Army and job fields could construct a workable interest scale without reference to large scale item rating procedures by job members or potential subjects.

POPULATION: About 5000 enlisted men comprising a two week processing run of all enlistees in continental U. S. Additional data such as AGCT, age, schooling, civilian job and aptitude test scores were collected.

PROCEDURE: From job analyses and other occupational data job elements pertinent to eight major occupational areas including over 90 per cent of Army enlisted men were selected. These elements were arranged in an order of difficulty and/or prestige level. The extremes used were jobs generally characteristic of private through master sergeant. 56 triads were constructed representing all possible orders of fields. Triads were arranged in order of difficulty and/or prestige level. Subjects were required to indicate MOST and LEAST preferred in each triad. A sample of 1000 papers was scored with keys based on the technicians' classification of job elements. Using the top and bottom 20 per cent in each area item-test analyses were made against the eight scores and iteration continued until purification was relatively complete. A new sample of 1000 papers was scored with these keys and another item-test analysis made. A final key was constructed from items which held constant and a third sample of papers scored for standardization. Intercorrelations were computed between all scores on the Preference Blank, personal data factors and aptitude test scores.

RESULTS: Scoring keys were established for several relatively independent areas; overlap was found among some of the original categories; a high percentage of the job elements remained scorable in their original fields; some job elements were misplaced on the scale of difficulty and/or prestige level as evidenced by their pulling power.

CONCLUSIONS: Judgment in scaling by technicians did result in creation of a useful instrument.

In expanding and revising, it would appear desirable to have the scaling accomplished by persons more nearly identical in age and background with the individuals for whom the instrument is intended.

10:15 A.M. The Vocational Interests of Engineering and Non-engineering Students. *George S. Speer, Illinois Institute of Technology.* (170)

PROBLEM: The problem was to discover whether freshmen students in engineering research differ significantly in vocational interest from other engineering students, and from non-engineering students.

POPULATION: The population consisted of 1038 freshmen

at Illinois Institute of Technology, enrolled as pure or research students in Mechanical, Electrical, Civil, Chemical, and Industrial Engineering; Architecture, Business, and Home Economics.

PROCEDURE: Analysis was made of the scores obtained on each of the nine sections of the Kuder *Preference Record* by students enrolled in each of the departments. Critical ratios were determined for differences found between the various groups.

RESULTS: Differences significant at the 1% level of confidence were found between engineering and non-engineering students; between students in different engineering fields; and between students in engineering research and those in pure engineering. The engineering research student is distinguished from other engineering students by higher scientific interests and lower interests in activities involving contact with other people. The other specific response patterns on the Kuder *Preference Record* for students in each of these groups will be indicated, and the significance of the differences discussed.

CONCLUSIONS: (1) The engineering research student, regardless of his field of specialization, varies as significantly from the non-research engineering student as the latter does from the non-engineering student.

(2) At the freshman level students in various engineering fields have significantly different interests, which should be used for guidance purposes.

(3) Freshmen engineering students vary significantly from non-engineering students in their vocational interests.

10:30 A.M. Work Satisfaction and Work Efficiency of Vocational Rehabilitation Counselors as Related to Measured Interests. *S. G. DiMichael and D. H. Dabelstein, Washington, D. C.* (171)

PROBLEM: To determine: The "typical profile" of measured interests of vocational rehabilitation counselors on the Kuder Preference Record;

The degree of stability of the scores after the counselors have had additional experience on the job;

The relationship, if any, between measured interests and job enjoyment;

The relationship, if any, between measured interests and job efficiency.

POPULATION: 146 male counselors engaged in vocational counseling and rehabilitation of the physically and mentally disabled in the nation-wide Federal-State program for the civilian disabled. Counselors in this study are employed in 14 states over the country. Group A (N = 100) had an average of 2 yrs. 6 mo. experience on the job, 4.14 yrs. of combined college and graduate training, and 93% are college graduates. Group B (N = 46) had an average of 1 yr. 1 mo. experience on the job, 3.82 yrs. of combined college and graduate training, 86% are college graduates.

PROCEDURE: The Kuder was administered to the counselors at a series of training institutes. Five months later, on the average, they were requested to cooperate with the study by filling out in private a Work Satisfaction and Interest Sheet. Concurrently, the supervisors were asked to rate the counselors on Work Efficiency for the job as a whole, and particular phases of it. Interest test scores were analyzed for a "typical profile," and for test-retest reliability. Test scores were correlated with the counselors' expressions of work satisfaction, and of interest. Test scores also were correlated with supervisory ratings to determine if the former could predict work efficiency.

RESULTS: The "typical profile" of measured interests showed high percentile scores in Social Service 98, Persuasive 82, Literary 65.

The test-retest coefficients on the nine scales ranged from .70 to .89.

The correlation coefficients of expressed to measured interests ranged from .24 to .75, the median being .56.

The counselors expressed a high degree of satisfaction with their work, the average score being 18.5 on a 20-unit scale. They liked most to "Interview Clients" and least to "Write Case Histories" and "Handle Clerical Work."

Between work satisfaction and interest scores, most of the correlations indicated no significant relationship except (at 1 per cent level of confidence) between: Interviewing Clients and Persuasive score; Handling Clerical Work and Clerical Score; Interviewing Clients and Social Service score, and (at 5 percent level) between: Job as a Whole and Social Service; Contacting Employers for Jobs and Persuasive.

Between supervisory ratings of work efficiency and measured interests, most of the correlations indicated no significant relationship except between (at the 1 percent level of confidence) Promoting the Program and Persuasive score; Reading Scientific Publications on Guidance and Literary; and (at the 5 percent level) between: Contacting Employers for Jobs and Persuasive score.

CONCLUSIONS: 1. The pattern of measured interests for vocational rehabilitation counselors is stable, and highly differentiated from the general population. 2. Five months of additional experience does not change the pattern. 3. The expressed interests of counselors correlate fairly highly with Kuder scores in certain fields such as Mechanical and Social Service, but much lower in the Artistic area. 4. Counselors derive much satisfaction from their work, enjoying most Interviewing Clients, and least Handling Clerical Details. 5. Some Kuder scores slightly indicate the particular aspects of the work from which counselors are more likely to derive

satisfaction, e.g., higher Persuasive scores slightly indicate more enjoyment in Interviewing Clients, Contacting Employers for Jobs; higher Social Service scores slightly indicate more enjoyment with the Whole Job, and with Client Interviewing; higher Clerical scores slightly indicate less dissatisfaction with Handling Clerical Details. 6. Some Kuder scores are slightly related to supervisory ratings on work efficiency, e.g., higher Persuasive scores are slightly related to efficiency on the Job as a Whole, Promoting the Program, and in Contacting Employers for Jobs; higher Literary scores slightly indicate more efficiency in counselors in regard to keeping abreast of Guidance and Rehabilitation Literature.

10:45 A.M. A Morale Study in a Typical Manufacturing Concern. *Marion W. Richardson, Richardson, Bellows, Henry & Co.* (172)

PROBLEM: This paper covers the methodological aspects of a study, completed in April of this year, involving the measurement of the attitudes of employees in one division of a large manufacturing concern, with emphasis on the differences in attitudes of supervisors and subordinates.

POPULATION: There were 865 employees, including 65 supervisors, 529 mechanics, 194 helpers and 77 other employees. These workers performed all maintenance functions in the central maintenance shop and in the production departments, frequently working with other employees in the plant.

PROCEDURE: A random sample of 5% of the population was interviewed to secure data for use in constructing items for the questionnaire. The Method of First Choice was used to determine the rank order of importance of the questions. Two parallel forms were constructed, with 7 common items to permit a statistical test of the homogeneity of the groups. A follow-up interview of 5% of the group was made.

RESULTS: In the population studied: 1. There were no significant differences in the responses of the two groups to the common items. 2. There was a marked difference in the emphasis given the various areas between the responses to the interview and the anonymous questionnaire. 3. Supervisors are significantly more favorable in their responses than are their subordinates. 4. There are no consistent differences in the attitudes of helpers and mechanics. 5. The data gathered were of extreme value in determining the nature and direction of specific corrective measures, e.g., retraining of supervisors, changes in work procedures, changes in the merit rating plan, revisions of policies on promotion and training, etc.

CONCLUSIONS: 1. In this situation, interviews alone did not give an adequate measure of attitudes. 2. An attitude questionnaire should be more or less unique to the particular plant. 3. A questionnaire constructed on the basis of the findings in interviews can be much more pertinent to the morale problems of the group. 4. An attitude survey appears to have a beneficial effect on the morale of the group per se. 5. There are some morale areas which can be profitably explored by means of a follow-up interview. 6. The Method of First Choice gave a satisfactory measure of the rank order of the attitude areas in terms of importance to the respondents.

EMOTION

Program arranged by the Division of Physiological and Comparative Psychology

10:00 A.M., Saturday, September 13

English Room, Hotel Book-Cadillac

WILLIAM A. HUNT, Chairman

10:00 A.M. Sex Differences in Somatic Reactions to Stress. *John I. Lacey, Fels Research Institute.* (173)

PROBLEM: To determine, for a sample of young children, sex differences in the functioning of the autonomic nervous system, during *relaxation, reaction to stress, recovery from stress,* and *adaptation upon stress repetition.*

POPULATION: Two samples of boys and girls ranging in age from 78 to 210 months were studied. One sample of boys and girls was subjected to the experimental procedure both in the summer of 1946 and in the winter of 1946–1947. A second sample of boys and girls was studied in the winter of 1946–1947 only.

PROCEDURE: Cardiovascular, respiratory and palmar conductance measures were recorded during relaxation, during reaction to a tilt-table stress, and during recovery from stress. The stress was presented twice in one session.

RESULTS: At the date of writing, only palmar conductance measures have received intensive analysis. Young girls exhibit significantly more relaxation, significantly more reaction, significantly less adaptation to stress repetition than do young boys. There is no consistent significant sex difference in recovery. Preliminary analysis of cardiovascular variables either yields corroborative evidence, or suggests sex differences in characteristic *patterns* of somatic reaction.

CONCLUSIONS: (1) Sex differences in autonomic nervous system functions are apparent even in young children.

(2) Females are not only more reactive to stress, but they also exhibit more physiological relaxation during rest. A factor of autonomic nervous system lability is suggested, from which recovery quotients seem to be excluded.

(3) Females exhibit less adaptation to repetition of a stress.

10:15 A.M. Pain as a Standardized Stimulus for Eliciting Differential Physiological Responses in Anxiety. *Robert B. Malmo, Charles Shagass and John F. Davis, Montreal, Canada.* (174)

PROBLEM: To investigate the effectiveness of a standardized series of pain stimuli for eliciting differential physiological reaction patterns in "clinically anxious" patients.

POPULATION: 10 mental patients in whom severe continuous anxiety of the "free-floating" variety pre-dominated. 10 controls, matched for factors of age and sex, in whom anxiety of "clinical" degree was absent.

PROCEDURE: A standardized series of pain stimulations were presented by a Hardy-Wolff stimulator. In order to test the effectiveness of this stimulating situation, two representative measures of response were employed. These were skin resistance and finger tremor.

RESULTS: Patients showed a greater increase in finger tremor than controls (1) during stimulation, (2) immediately after stimulation, (3) after examiner's question about the intensity of stimulation, and (4) shortly before the next stimulation in the series.

Both background level of skin resistance and mean amplitude of response were lower for the patient group. The most striking difference between the two groups was in frequency of anticipatory responses which was much higher for the patient group.

All differences reported are statistically reliable.

CONCLUSIONS: The patients displayed hyper-reactivity of tremor and hypo-reactivity of palmar sweating upon painful stimulation. Over-reaction to anticipation of pain was noted in both tremor and skin resistance records.

On the whole there was very little overlapping between patient and control groups. These results indicate that the standardized situation which was employed is an effective one for eliciting differential physiological reaction patterns in "clinically anxious" patients.

10:30 A.M. Gastric Secretion of Hydrochloric Acid in Dogs Maintained in a Chronic Fear State by Repeated Pain-Fear Stimulation. *George F. Mahl, Yale University.* (175)

PROBLEM: The problem is to investigate the relation between gastric secretion of hydrochloric acid and persistent fear.

POPULATION: 7 dogs: 2 experimental and 5 control dogs.

PROCEDURE: A modified conditioning program of random buzzer and buzzer-electric shock stimulation was applied to the experimental dogs; the control dogs were stimulated only by the buzzer. This stimulation was periodically administered 24 hours a day over an extended period of time. Gastric analyses were made on both experimental and control dogs under these conditions with a standard hunger drive. Subsequently, gastric analyses were made on the experimental dogs following a recovery period.

RESULTS:

a) The gastric contents of the experimental dogs are significantly higher in acidity than the gastric contents of the control dogs.
b) Following a recovery period, the gastric contents of the experimental dogs show a significant decrease in acidity in comparison with the previous contents.
c) Immediate pain stimulation is not necessary for the maintenance of this abnormal acidity once conditioned fear behavior has been established.
d) These differences in gastric acidity are associated with increased pulse rate, decreased daily food intake, loss in body weight, and overt behavior changes characteristic of fear.

CONCLUSIONS:

a) The experimental procedure produced a chronic state of fear in the experimental dogs; this is associated with increased hydrochloric acid secretion and increased pulse rate.
b) Cannon's emergency theory of emotions is not supported by these results. Possible reasons for this discrepancy and limitations of Cannon's theory will be noted.
c) Theoretical implications of these results for the etiology of peptic and duodenal ulcers and general psychosomatic theory will be mentioned.

10:45 A.M. Brain Function in Emotion. *Magda B. Arnold, University of Toronto.* (176)

This paper attempts to present a survey of recent experimental work in neuro-physiology and psychology as a basis for a new theory of brain function in emotion.

First, Cannon's thalamic theory of emotion is re-examined and it is concluded that his assumption of emotion as a thalamic release phenomenon is no longer tenable. On the basis of experimental evidence it is shown that a hypothesis of emotion as cortical excitation of thalamus-hypothalamus, rather than as a release from cortical inhibition, is the logical inference from the available data.

It is then suggested that a "complete emotional experience" consists of two phases: (a) cortical evaluation of the stimulus situation, which initiates cortico-thalamic impulses mediating various peripheral changes; (b) central (cortical) perception of these changes which constitutes a secondary reenforcement. Finally, it is suggested that the cortico-thalamo-hypothalamic pathways excited in emotion are anatomically distinct for at least the emotion of fear and that of anger (or excite-

ment). Impulses from the frontal lobes may activate the sympathetic nervous system via the dorsomedial thalamic nuclei and the posterior part of the hypothalamus, thus producing the physiological effects of *fear;* and impulses from the gyrus cinguli and adjacent areas would activate the parasympathetic system via the anterior thalamic nuclei and the anterior part of the hypothalamus, producing the effect of *anger* (or excitement).

Thus the author's previous findings of a physiological differentiation of fear and anger are shown to rest on an anatomical basis.

INTERPRETATION OF INSTRUMENTS

Program arranged by the Division of Military Psychology

10:00 A.M., Saturday, September 13

Bagley Room, Hotel Statler

JACK DUNLAP, Chairman

10:00 A.M. Evaluation of Aircraft Attitude Indicators on the Basis of Link Trainer Performance. *Roger Brown Loucks, University of Washington.* (177)

PROBLEM: To compare various types of aircraft attitude indicators (artificial horizon instruments) so as to determine those factors which made for ease of interpretation. To analyse the underlying cues which insure minimal error in spatial orientation.

POPULATION: A total population of 555 Army Air Force cadets without previous instrument flying experience were employed as subjects in comparing the relative effectiveness of a series of aircraft attitude indicators or artificial horizon instruments.

PROCEDURE: Air Force cadets were required to fly a Link trainer under conditions of turbulent air by referring to a particular attitude indicator. Objectively recorded deviations of the trainer from level and horizontal flight provided the data for a comparative evaluation of instruments.

RESULTS: Four classes of attitude indicators were employed in a series of comparisons: (1) A scaleless instrument in which the horizon bar rotates with regard to a fixed minature plane; (2) A moving-scale indicator in which the index and miniature plane are fixed; (3) A British indicator in which the moving pointer and scale are in the lower half of the dial face; (4) A reversed rotation indicator in which the moving elements rotate in a direction *opposite* to that of the conventional AAF instrument. The last instrument (No. 4) is the one indicator of the four that shows a superiority of high statistical significance. Although most subjects who are tested on two successive instruments prefer the one they use last, the reversed motion indicator (No. 4) was clearly preferred by a majority of the subjects regardless of the order in which it was presented.

CONCLUSIONS: It appears that in an enclosed space, such as a cockpit, the direction of rotation of the moving elements in an instrument comprises the factor of major importance which is reacted to most directly—a factor the trained pilot must learn to disregard. In the present case this is particularly noteworthy in that the static relationship of the instrument's miniature plane and horizon are in opposition to the adjustment of the control stick elicited by the dynamic relationship of the moving elements in the indicator. NOTE: This investigation was conducted in and with the assistance of the Staff of the Dept. of Psychology of the AAF School of Aviation Medicine, Randolph Field, Texas, as a part of the research activities within the AAF Classification Program.

10:15 A.M. Direction of Motion Preferences in Positioning Visual Indicators by Means of Control Knobs. *Melvin J. Warrick, Osborn, Ohio.* (178)

PROBLEM: For safety, learning economy, and efficiency in operating a mechanical device, it is desirable that the motion relationship between indicator and control conform to the habit preferences of the majority of operators. These experiments were conducted to determine the stereotype of operators in each of five common control-indicator arrangements and to determine the effect on speed and accuracy when an operator is forced to operate alternately, similar controls when the control-indicator motion relationship of one is reversed.

POPULATION: Fifty experienced AAF pilots and 72 male non-pilot college students served as subjects. In one experiment an apparatus presented five common control-indicator arrangements. The subjects were required to move an indicator light to center as rapidly as possible using the corresponding control knob. Although unknown to the subjects, either direction of rotation of the control knob moved the light to center. The direction of the subject response to each indicator light position of each arrangement was recorded.

In a second experiment two control indicator arrangements were operated alternately. The motion relationship of each arrangement was fixed for any one run but the motion relationship of either arrangement could be reversed from one run to the next. Speed and accuracy data were recorded for each forced motion relationship arrangement.

RESULTS: It was found in the first experiment that in control-indicator arrangements where the control and indicator are in the same plane, that plane facing the operator, that the majority of subjects consistently responded as if they expected the indicator to move clockwise as a result of clockwise control motion and vice

versa. In control-indicator arrangement where the indicator and control are not in the same plane the responses are not consistent.

In the second experiment it was found that when two control-indicator arrangements are operated alternately the subjects operate *both* controls more rapidly and accurately when *both* motion relationships are either in accord with, or contrary to, the stereotype than they do when the two motion relationships are different.

CONCLUSIONS: It is concluded that an optimum arrangment of, and motion relationship between, an indicator control can be specified for a single unit. However, if the system involves the operation of two or more control-indicator arrangements it is more important that the motion relationships of the various control-indicator arrangements be consistent than that any one be in accord with the stereotype.

10:30 A.M. An Analysis of Scale Reading Errors. *Julien M. Christensen, Aero Medical Laboratory, Wright Field.* (179)

PROBLEM: This investigation was concerned with an analysis of the specific types of errors made in the reading of various scales with a view to the devising of methods of reducing the errors.

POPULATION: In one study, 100 AAF rated navigators and 348 high school mathematics students were used as subjects. In a second study, 38 college students and 80 AAF rated pilots were used.

PROCEDURE: In the first study the subjects were required to make measurements and plot vectors using a protractor scale on aerial navigation plotters. In the second study the subjects were required to read simple standard sized AAF circular and linear scales. An attempt was made to categorize the errors made on the various scales. Several methods of eliminating the various errors were tried.

RESULTS: Over 98% of the scale reading errors fell into one of the following groups: Reversal, reference, tolerance, reciprocal, transposition, and figure confusion. Some of the innovations introduced, such as the "staircase" scale, significantly reduced the number of errors.

CONCLUSIONS: Experimentation revealed that scale reading errors may be categorized into logical, rigidly defined groups. Analysis of the causes of these errors usually suggests logical variation in scale design with a resultant reduction in errors.

10:45 A.M. Accuracy of Interpolation between Scale Markers as a Function of Scale Interval Number. *Alphonse Chapanis, Johns Hopkins University.* (180)

PROBLEM: In polar-coordinate presentations, the distance from the center to any point may be estimated by visual interpolation between equally-spaced, concentric rings. This experiment measured the accuracy of interpolation as a function of the number assigned to the interval between rings.

POPULATION: The subjects were 11 Navy enlisted men, trained in the use of radar and polar-coordinate display systems.

PROCEDURE: The polar-coordinate presentation appeared on a radar scope, 12 inches in diameter, with 4 concentric rings spaced 1½ inches apart. Eleven different numbers were assigned to the intervals between rings: 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000, and 10,000 yards and 2.5 miles (2.5 nautical miles equals 5000 yards). Each subject was required to estimate by visual interpolation the distance to points randomly distributed among the rings. Fifty such estimations were obtained for each subject and each experimental condition. A total of 5050 observations was accumulated.

RESULTS: The primary data are discrepancies between the estimated and true positions of the points. These errors are expressed as percentages of the interval between the concentric rings in each case. An analysis of variance shows that the differences between subjects are highly significant. Differences between average errors with the various number intervals are also highly significant. These differences are consistent from subject to subject since the interaction between subjects and number intervals is low. Interpolations with the 1000, 2000 and 10,000 yard scales were the most accurate; those with the 6000 and 3000 yard and 2.5 mile scales, least accurate.

CONCLUSIONS: The results of this experiment show that the number assigned to scale intervals has a significant effect on the accuracy of interpolation between scale markers.

ACKNOWLEDGEMENT: The author gratefully acknowledges the assistance of Mr. Michael Leyzorek in this experiment. This research was performed under Contract N5-ori-166, Task Order I, between the Special Devices Center, Office of Naval Research, and The Johns Hopkins University.

SYMPOSIUM: ACHIEVEMENT AND PRODUCTIVITY IN MATURITY AND OLD AGE

Sponsored by the Division on Maturity and Old Age

10:00 A.M., Saturday, September 13

Michigan Room, Hotel Statler

The participants in this symposium will summarize information, especially unpublished findings or facts not readily available in the American literature, regarding age changes in achievement and productivity. Particu-

lar attention will be given to needed research, as well as to practical implications for educational programs, industrial practice, professional development, and problems of retirement.

GEORGE LAWTON, Chairman

Speakers: CHARLOTTE BÜHLER and HARVEY C. LEHMAN
Panel: REIGN H. BITTNER, H. H. REMMERS, and S. L. PRESSEY

SYMPOSIUM: EVALUATION OF COUNSELING

Sponsored by the Division of Counseling and Guidance Psychologists

10:00 A. M., Saturday, September 13

Crystal Ballroom, Hotel Book-Cadillac

EDWARD S. BORDIN, Chairman

Participants: D. N. WIENER, HAROLD PEPINSKY, R. S. SOLOMON, HENRY BOROW, and MILTON E. HAHN

SYMPOSIUM: THE ROLE OF THE PSYCHOLOGIST IN PROMOTING A LONG-ENDURING PEACE

Sponsored by The Society for the Psychological Study of Social Issues

10:00 A.M., Saturday, September 13

Italian Garden, Hotel Book-Cadillac

The symposium will be focused around the various ways in which psychological theories and techniques may be applied to facilitate the maintenance of international peace. Three functions of the psychologist will be explored in relation to this goal: as consultant to policy-makers; as child psychologist; as specialist in international agencies like UNESCO.

DANIEL KATZ, Chairman

Participants: RICHARD S. CRUTCHFIELD, ELSE FRENKEL-BRUNSWIK, HERBERT H. HYMAN, and DORIS TWITCHELL-ALLEN

VISUAL PROBLEMS IN EQUIPMENT DESIGN

Program arranged by the Division of Military Psychology

11:10 A.M., Saturday, September 13

Banquet Room, Hotel Statler

FRANK A. GELDARD, Chairman

11:10 A.M. The Effect of Certain Illumination Variables on the Visibility of Signals on Cathode Ray Screens. *Stanley B. Williams, Johns Hopkins University.* (181)

PROBLEM: Some cathode ray screens require the observer to make a differential brightness discrimination to detect a signal. This study evaluated the relative effects on this discrimination of the following variables: (1) brightness of viewing screen; (2) external illumination; (3) adaptation state of the eye.

POPULATION: Two to four highly trained observers served as subjects in three experiments.

PROCEDURE AND METHOD: Thresholds were measured by the method of average error. Observer adjusted the voltage of the signal until it formed a just noticeable image on the screen. Screen brightness was measured directly in volts biasing the control grid of the cathode ray tube (no. 7BP7) but volts can be translated approximately into brightness units. External illumination was measured photometrically, as was the intensity of the special exposure field to which the eye was light adapted. A highly stabilized tube circuit was employed.

RESULTS: Over a range of 12 volts bias, peak screen brightness changes by about 5 log units and affects visibility up to 45 decibels of signal power. The function goes through a definite maximum, which is partly a function of the eye and partly of the screen phosphor. Adaptation levels from darkness to 2000 millilamberts had up to 15 decibels' effect and retarded detection of a minimal signal as much as 15 minutes. Visibility was best when the eye was adapted to an illumination approximating that of the screen. External illumination of an intensity near that of the test field did not impair visibility provided it did not reflect directly into the eye from the glass surface of the tube. A small amount of room illumination, properly shielded, improved visibility very slightly, provided the optimal screen brightness was used.

CONCLUSIONS: Optimal values of screen brightness (control grid bias), adaptation level, and external illumination can now be set for at least one common type of screen. They probably hold for all P7 phosphors.

ACKNOWLEDGEMENT: This research was performed under Contract N5-ori-166, Task Order I, between the Special Devices Center, Office of Naval Research, and The Johns Hopkins University.

11:25 A.M. Effect of Vibration on Legibility of Numerical Material. *Mason N. Crook, Arthur C. Hoffman, and Nils Y. Wessell, Tufts College* (182)

PROBLEM: A series of experiments was designed to investigate the effect on legibility of different amplitudes and frequencies of vibration of the reading material.

POPULATION: Male college students selected for visual acuity were used as subjects.

PROCEDURE: Apparent vibration of the visual field was produced by means of Risley prisms rotated between the eyes and the reading material. Amplitude of vibration, frequency of vibration, brightness of field, and size

of type, were independently variable. Subjects were required to make same-different judgments of pairs of digits under various combinations of these variables. RESULTS AND CONCLUSIONS: It was found that varying any one factor within moderate limits, under otherwise favorable conditions, did not significantly affect performance, but that unfavorable degrees of several of the factors in combination with each other or in combination with a less familiar or more difficult reading task produced a significant impairment.

Acknowledgment is made to Mr. Joseph W. Wulfeck for assistance in the experimental routine.

11:40 A.M. Legibility of Instrument Dials as a Function of Dial Diameter and the Spacing of Scale Division. *A. C. Williams, Jr., University of Illinois, and Walter F. Grether.* (183)

PROBLEM: To determine how variation in diameter of an instrument dial and the spacing of its scale divisions affect the speed and accuracy with which it can be read under daylight conditions and under simulated night time conditions.

POPULATION: Aircraft crewmen as sampled by 80 male college students with 20-20 binocular vision.

PROCEDURE: Sixteen dials with markings of flourescent paint incorporating four different diameters (1″, 1⅞″, 2¾″, 4″) and four different angular spacings between scale divisions (5°, 10°, 20°, 40°) were presented to S's from behind a mechanical shutter in a screen. Time to respond and accuracy of response were recorded. N for each dial was 400 readings, 200 with bright lighting, 200 with ultraviolet cockpit lighting.

RESULTS: Both the diameter of dials and the angular spacing of scale divisions affected accuracy of response systematically but did not markedly affect time of response. Illumination did not affect accuracy except in the case of the smallest dial. In general, for dials with the same angular spacings an increase in diameter from 1″ to 4″ increased the accuracy of response. Likewise for dials with uniform diameters larger angular separation between scale markings increased the accuracy of response. But in the case of the dial with the largest diameter and largest angular separation accuracy became slightly less. Curves were drawn showing the degree of reading accuracy to be expected with various combinations of diameters and spacings. The effect of diameter and angular separation of scale divisions was reduced to a single variable, the length of the graduation interval, and this was plotted against accuracy of reading giving a reasonably smooth curve. Most accurate reading was obtained when the length of the graduation interval fell between ½ and 1 inches.

CONCLUSIONS: 1. The accuracy with which an instrument dial can be read is partly a function of its diameter and the angular spacing of its scale divisions. Accuracy of reading tends to improve with an increase in either of these variables except that a limit is indicated beyond which a further increase will result in diminished accuracy of reading.

2. Variation of illumination within the conventional range does not greatly affect reading accuracy except when both the diameter of the dial and angular separation of its markings are small.

3. The linear distance between scale markings, i.e. the length of the graduation interval, can be used within limits to estimate the accuracy of reading to be expected.

4. The size of a dial can be fitted to the accuracy of reading required of the dial, resulting in an economy of space.

GSR AND EXTIRPATION

11:10 A.M., Saturday, September 13
English Room, Hotel Book-Cadillac
CHARLES E. HENRY, Chairman

11:10 A.M. Intensity of the Conditioned Stimulus and Strength of Conditioning of the GSR. *David A. Grant and Dorothy E. Schneider, University of Wisconsin.* (184)

PROBLEM: To investigate variation in *strength of conditioning* in the GSR as a function of intensity of the conditioned stimulus. "Strength of conditioning" or habit strength is here differentiated from "response strength."

POPULATION: Men and women students who volunteered from elementary psychology classes at the University of Wisconsin. Eighty of these S's were assigned randomly to 16 experimental groups.

PROCEDURE: The CS's were 200 dv tones of one sec. duration. The intensity levels were 76, 86, 96 and 106 db. Each S was given 10 adaptation trials with the *extinction CS*, then 20 reinforcing trials with the *reinforced CS* plus electric shock, and then ten extinction trials with the *extinction CS*.

RESULTS: GSR records from an AC measuring circuit were subjected to analysis of variance. The 16 groups were arranged in four rows according to the intensity of the *reinforced CS* and in four columns according to the strength of the *extinction CS*. The error estimate was based upon 64 degrees of freedom. The row differences were not significant; the range of intensities used seemed not to affect the strength of conditioning, but significant column differences showed that response strength was clearly affected by CS intensity. The interaction mean square revealed the intensive generalization gradient.

CONCLUSIONS: The results extend and corroborate Hilgard and Marquis' re-analysis of Hovland's data in that variation in the intensity of the CS: (1) seems not to affect strength of conditioning in the GSR; but (2) does affect response strength. In the important negative finding, this experiment corroborates the authors' parallel study of the conditioned eyeblink. These observations are contrary to one of the fundamental tenets of the current version of Hull's theory of behavior and are in agreement with Spence's (personally communicated) hypothesis.

11:25 A.M. The Comparative Discriminatory Value of Various Measures of GSR for Words of Differing Affective Value. *Ernest A. Haggard and Harold E. Jones, University of California.* (185)

PROBLEM: To investigate *I*: quantitative differences in four GSR and four associated measures to words classified by the *Ss* as pleasant, unpleasant, and indifferent, and *II*: the relative discriminatory value of these measures under comparable conditions.

POPULATION: A grade sample of 50 boys and 50 girls was tested and retested at average ages of 13.5 and 17.5 years. For each year, a balanced stimulus schedule included four words in each of the three affective classifications. Total N = 2300 GSRs.

PROCEDURE: Mean values for each word were obtained for each sub-group in terms of: resistance and conductance changes, log. of the conductance changes, changes in log. resistance, latent time, responding time, recovery after 5″, and recovery quotients.

RESULTS: Words discriminated by the *S*'s reports as affective or neutral yielded, for the first sample (13.5), differences significant at the 5% level on three measures: resistance change, log. of the conductance change, and recovery quotient. In the more detailed analysis of the second sample (17.5), differences significant at the 1% level were found, for boys and girls separately, on all the GSR measures and on the recovery quotient. For the two samples combined, the measure based on the log. of the conductance change yielded the greatest discrimination between the pleasant and indifferent and the unpleasant and the indifferent words.

Highly significant and divergent differences in the discriminatory value of the four GSR and four associated measures were found for the age and sex variables, but not to the same degree for the PIU variable.

CONCLUSIONS: A comparative analysis of the findings indicates that for these data, resistance change, the simplest index of the GSR, is a satisfactory measure of average difference in response to words of varying affective value.

The marked differences among the four GSR measures may be accounted for in part by differences in (*a*) the initial resistance obtaining at the time the GSRs were recorded and (*b*) the mathematical nature of the measures under consideration. These results indicate the need for a closer examination of the nature of the measures themselves before their usefulness in describing experimental findings can be taken at face value.

11:40 A.M. An Appropriate Unit for the Measurement of the Galvanic Skin Response. *Oliver L. Lacey and Paul S. Siegel, University of Alabama.* (186)

The galvanic skin response (GSR) may be quantified in terms of a number of units—for example, change in resistance, change in conductance, change in logarithm of resistance, et cetera. Such units are interconvertible and thus fundamentally equivalent in meaning. This equivalence in meaning, however, does not imply that all are equally appropriate for research purposes. In order to ensure validity of interpretation, it is necessary that the results be expressed in a form amenable to statistical treatment. And, since almost all conventional statistical techniques assume normality of the parent population, this necessity implies a criterion for the selection of an appropriate unit: we need a unit which will provide a set of measures not deviating significantly from normality (Criterion I). This requirement is general, applying to the measurement of any variable. In the particular case of GSR measurement a further characteristic is necessary. In order to make valid comparisons of the responses of individuals having different *basal levels* of resistance, the GSR should be expressed in terms of a unit providing measures *independent* of basal level—i.e., response and level must not be correlated (Criterion II). Our experiment is a check in terms of these two criteria of eight possible units of measurement of the GSR.

The resistance of 92 subjects before and after subjection to a mild electric shock was obtained. The distributions of GSR scores in terms of eight possible units—change in resistance, change in conductance, percent change in resistance, percent change in conductance, change in log resistance, log of change in resistance, log of change in conductance, and a unit recently suggested by Haggard—were examined for normality and for independence of general level. Of these units only change in conductance was found to meet both criteria satisfactorily.

11:55 A.M. Some Observations on the Effect of Removal of the Visual Cortex on Reflex Responses in the Cat. *William E. Kappauf, Princeton University.* (187)

PROBLEM: To obtain new data on certain ocular reflexes in animals lacking the visual areas of the cortex

POPULATION: 3 cats which, more than a year and a half before the testing herein reported, had been subjected to bilateral operations removing the visual cortex; 4 normal animals as controls.

OBSERVATIONS AND RESULTS: *Pupillary and palpebral responses:* Threshold intensities for eliciting pupillary constriction and eye blink with a $\frac{1}{10}$th second flash of light were determined for all the animals. Under conditions of adaptaion to a uniformly illuminated field at 2.8 millilamberts brightness, average intensities of the flashing stimulus spot required to initiate pupillary constriction in the operated animals ranged from 2100 to 14000 ml., in the normal animals from 110 to 1400 ml. Average threshold intensities for eye blink were between 17000 and 43000 ml. for the operated animals, between 340 and 21000 for the normals.

Nystagmus and visual pursuit: Operated animals are known to display normal optic nystagmus to movement of an extended striated field, but fail to respond to movements of a food pan back and forth before their eyes. To clarify the limits of their visual function in this regard, the operated animals were compared with the normals in a situation where the number of moving illuminated stripes was progressively reduced. Whereas the typical response of the normal animals was pursuit of the moving pattern, the operated animals typically displayed nystagmus even when the number of stripes had been reduced to one. The strength or regularity of this nystagmus varied with the direction of stimulus movement when one eye was covered.

APTITUDE PREDICTION

11:10 A.M., Saturday, September 13

Bagley Room, Hotel Statler

M. W. RICHARDSON, Chairman

11:10 A.M. The Development and Validation of a Set of Musical Ability Tests. *Robert W. Lundin, Indiana University.* (188)

PROBLEM: In lieu of present existing inadequate measures of musical ability, the present investigation had as its aim, first, to develop a set of tests which would measure directly and objectively some musical behaviors not previously considered, and secondly to relate these measures to intelligence and other sensory acuities as measured by Seashore and Drake.

POPULATION: For preliminary item analysis 60 unselected freshmen and 15 musicians were used. For final testing 196 unselected freshmen and 167 musicians.

PROCEDURE: After preliminary item analysis on the basis of internal consistency and differences between the groups, tests were rerecorded on phonograph records using a Hammond organ and piano as media for sound.

RESULTS: The five tests selected were measures of (a) interval discrimination, (b) melodic transposition, (c) mode discrimination, (d) melodic sequences and (e) rhythmic sequences. The tests were validated on the musician group using professors' ratings in (a) melodic dictation, (b) harmonic dictation, (c) written harmonization, (d) general ability in theory, (e) performance, and (f) sum of ratings. Reliability coefficients were computed for groups separately for each test and total scores. Tests were correlated with years training, liking toward classical music, Seashore tests of pitch, rhythm and tonal memory, Drake test of tonal memory, and intelligence test scores. (California mental maturity)

CONCLUSIONS: Validity coefficients are high. (*Total scores* and melodic and harmonic dictation .70, general ability .65, performance .51, total ratings .69.) Reliability coefficients range from .60 to .89. There is a low positive relation between *total scores* and training and liking toward classical music. Correlations with Seashore tests are low but positive. When the Seashore and Drake tests are validated against our criteria, validity coefficients for any one criterion used are almost without exception lower than ours. When correlated with intelligence as measured by the California test, our tests show close to a zero relationship for both groups.

11:25 A.M. The Development of Two Machine-Administered Scales of Stenographic Proficiency. *Ruth A. Pedersen, Richardson, Bellows, Henry & Co.* (189)

PROBLEM: The problem was to reduce the large individual variations in clarity and speed of dictator characteristic of all personally administered stenographic tests, and to reduce response and scoring time by eliminating transcriptions of dictated material.

POPULATION: The basic group consisted of 420 senior high school students in a large commercial high school, supplemented by 40 employed stenographers.

PROCEDURE: Two scales were devised. The first consisted of five tests (essentially business letters) designed to determine the maximum of five levels with respect to intrinsic language difficulty the stenographer could record and transcribe. The second series of eight tests was designed to determine the maximum speed at which stenographer could take transcribable material of average difficulty. In both series, item analyses reduced transcriptions to completion tests arranged for rapid scoring. Only critically discriminating items were retained. Adaptations of conventional psychophysical scaling techniques were applied to determine limits of prediction from each test in a series to the next.

RESULTS: Two scales were standardized, and definite interpretations of test performance established in each case. The speed scale reliably (.75 to .90) measures speeds from 60 to 130 words per minute. Complete transcriptions (and typewriters) are eliminated. Tables, based on .05 limits, are provided for stopping the testing and scoring at any justifiable point. Scales are now available for phonographs set at 78 r.p.m.

CONCLUSIONS: 1. The two scales, usable together or separately, reliably measure difficulty and speed of dictation.

2. Norms provided strongly suggest that schools and stenographers overestimate proficiency, particularly with respect to speed.

3. Properly constructed scales offer practical advantages in terms of saving of time.

11:40 A.M. Use of a Specialized Interview Technique for the Collection of Criteria Data. *C. M. Vernier, Fairfax, Virginia, J. H. Criswell and M. V. Howell.* (190)

PROBLEM: To evaluate the interview technique as a method for obtaining reliable and valid measures of job performance. The field review method of the War Department was adapted to a specialized interview technique and rating scales for each job element constructed.

POPULATION: Test technicians trained in interviewing techniques conducted approximately 230 interviews with supervisors of 320 clerical employees of the Social Security Board.

PROCEDURE: Twenty-four five-point rating scales were constructed covering the major elements in clerical jobs with speed and accuracy treated as separate aspects of performance, and a one-paragraph definition of each element prepared. Two immediate supervisors were interviewed for each employee. Descriptions of each employee's job, ratings on all appropriate scales and verifications of each rating were obtained.

RESULTS: Correlations between the two supervisors' ratings on individual job elements ranged from .40 to .70. Intercorrelations between combined ratings for the different scales were from .30 to .90.

CONCLUSIONS: The relatively high reliabilities and varied magnitude of the correlations between the different scales indicate that in the absence of reliable work records, the interview technique will provide one of the best methods for obtaining valid measures of job performance. The procedure affords: 1). actual statement of specific job duties; 2). selection of scales appropriate to the individual employee; 3). uniform terminology and standards by means of the technician's translation of supervisors' terms to scale terms, and the use of the standard element definitions; 4). reduction of halo effect by forced rating of all employees on one scale at a time; 5). accurate ratings resulting from the questions answered by supervisors in order to define their standards and justify each rating.

11:55 A.M. The Roeder General Aptitude Profile. *Wesley S. Roeder, Portland, Oregon.* (191)

The Roeder General Aptitude Profile is an *aptitude test* in the Clerical, Computational, Mechanical, Social Service, Scientific and Persuasive fields. It is an instrument used in the educational and vocational counseling and guidance of secondary school students and adults. The profile gives a swift and valid picture of the individual's relative strengths and weaknesses in various occupational fields. A list of occupational patterns directly related to these fields is included.

It has been standardized and validated with 3,000 secondary school students, college students and adults in fifteen centers and cities. It was administrated at 24 high schools and eleven colleges in different geographical areas. It has also been validated with groups of experts in the various fields. The criteria for the selection of the experts was based upon the fact that they were individuals who had had four years or more experience in their respective fields. The occupational groups included office workers, accountants, bookkeepers, salesmen, salesclerks, automobile mechanics, machinists, carpenters, engineers, maintenance men, airplane mechanics, counselors, interviewers, social case workers, deans, teachers, juvenile court judges, psychologists, physicians, laboratory technicians, x-ray technicians, dentists, nurses, and army officers.

The reliability correlations for the sub-tests are as follows: Clerical sub-test .96, Computational sub-test .915, Mechanical sub-test .93, Social Service sub-test .925, Scientific sub-test .84, Persuasive sub-test .81. The split-half method was used in obtaining these reliability correlations which were then corrected by the Spearman-Brown formula.

The entire aptitude test requires one hour and twenty-five minutes. The responses are recorded on a special IBM answer sheet. The raw score for each of the six sub-tests is the number of right answers minus one-third of the number of wrong answers. (The formula is $R - \frac{1}{3} W$). Both hand-scoring and machine-scoring forms are available.

School, college, and personnel authorities are finding this general aptitude test suited to their needs, especially when used with an interest inventory.

SPECIAL MEETINGS

The Division on Maturity and Old Age will hold a dinner Friday, September 12, 6:00 P.M., in the Founders Room, Hotel Book-Cadillac. The Presidential Address will follow this dinner.

The Psychometric Society will hold a dinner Friday, September 12, 6:00 P.M., in the Bagley Room, Hotel Statler.

The Surveys Group will hold a dinner Friday, September 12, 6:00 P.M., in the Ivory Room, Hotel Statler.

The Sir Charles Bell Society will hold a dinner Friday, September 12, 6:00 P.M., in Parlor H., Hotel Book-Cadillac.

The Michigan Psychological Association will hold a luncheon Wednesday, September 10, 12:00 M., in the Ivory Room, Hotel Statler.

The Illinois Association of Applied Psychology will hold a luncheon Wednesday, September 10, 12:00 M., in Parlor H, Hotel Book-Cadillac.

The Stanford University Alumni will hold a luncheon Wednesday, September 10, 12:00 M., in the Pan American Room, Hotel Book-Cadillac.

The Ohio State Alumni will hold a luncheon Thursday, September 11, 12:00 M., in the English Room, Hotel Statler.

The University of Chicago Alumni will hold a luncheon Thursday, September 11, 12:00 M., in the Pan American Room, Hotel Book-Cadillac.

The Committee of University Department Heads will hold a luncheon Friday, September 12, 12:00 M., in the Ivory Room, Hotel Statler.

The Committee for the Study of Animal Societies under Natural Conditions will meet Wednesday, September 10, 5:00 P.M., in Parlor C, Hotel Statler.

The Conference of State Psychological Societies will meet Thursday, September 11, 4:00 P.M., in Parlor C, Hotel Statler.

The SPSSI Committee on Intergroup Relationships will meet Thursday, September 11, 4:00 P.M., in Parlor E, Hotel Statler. This is a newly active committee most of whose members are individuals interested in research on intergroup relations. Plans for the program of the committee will be made at this meeting. The discussion will include possibilities for coordination of research in this field and for exchange of measurement techniques prio to publication. All SPSSI members interested in joining this committee are invited to attend.

SPSSI is sponsoring a *Kurt Lewin Memorial Program* Friday, September 12, 8:00 P.M., in the Ballroom, Hotel Statler. Dr. Edward C. Tolman will be chairman of this program, and Dr. Gordon W. Allport and Dr. Alfred J. Marrow will speak.

SPSSI will hold its business meeting Monday, September 8, 7:00 P.M., in the small auditorium, Rackham Memorial Building. The Board Meeting of SPSSI will be held Monday, September 8, 9:00 A.M. to 5:00 P.M., in Room 109, Rackham Memorial Building.

Psi Chi will meet Friday, September 12, 4:00 P.M., in the Pan American Room, Hotel Book-Cadillac.

Those attending luncheons or dinners must buy their tickets at the table located at the Information Section. Tickets will not be sold at the time of the luncheons or dinners.

INDEX

Ackerman, Nathan W., 322
Amatora, Sister Mary, 268
Ammons, R. B., 308
Anderson, Harold H., 272
Anderson, John E., 275
Arnold, Magda B., 344
Baier, Donald E., 325
Baker, Harry J., 275, 284
Bare, John K., 331
Barnes, T. Cunliffe, 337
Barr, A. S., 265, 272
Bartlett, Neil R., 295
Bayley, Nancy, 314
Bear, Robert M., 291
Bechtoldt, Harold P., 304
Beck, Lloyd Henry, 298
Bellak, Leopold, 271
Bellows, Roger M., 338
Bennett, George K., 287
Bernreuter, Robert G., 301
Berry, Richard N., 294
Bettelheim, B., 323
Betts, Gilbert L., 287, 327
Bijou, Sidney W., 319
Bills, Marion, 284
Birch, Herbert G., 317
Bittner, Reign H., 347
Bondy, Curt, 318
Bordin, Edward S., 293, 347
Borow, Henry, 347
Brandt, Hyman, 311
Braverman, Sydell, 271
Bray, Charles W., 335

Britt, Steuart H., 313
Brosin, Henry, 300
Brotemarkle, Robert A., 295
Browne, C. G., 321
Brownell, W. A., 275
Brozek, Josef, 329, 330
Bruner, Jerome S., 284, 285
Bugelski, B. R., 311
Bühler, Charlotte, 318, 347
Cahalan, Don, 328
Cameron, Dale, 273
Carmichael, Leonard, 300
Carp, Abraham, 273
Carpenter, C. R., 274
Carter, Jerry W., Jr., 295
Cartwright, Dorwin, 265
Cass, William A., Jr., 273
Cattell, Raymond B., 273, 335
Challman, Robert C., 315
Chapanis, Alphonse, 306, 346
Chapman, Dwight W., 265
Chard, Ray D., 274
Chein, Isidore, 324
Christensen, Julien M., 346
Citron, Abraham F., 318, 336
Clark, George, 264
Conrad, Herbert S., 275, 335
Cook, Stuart W., 265, 329
Coombs, Arthur W., 295
Coombs, Clyde H., 305
Cooper, Clara Chassell, 280
Coppock, Harold, 219
Couey, Fred, 281
Covner, Bernard J., 338
Criswell, J. H., 351
Cronbach, Lee J., 281
Crook, Mason N., 347
Crutchfield, Richard S., 347
Cureton, Edward E., 286
Dabelstein, D. H., 342
Dailey, John T., 310
Daniel, Robert S., 266
Daniel, William J., 300
Darley, John G., 284
Darrow, Chester W., 265
Davis, John F., 344
Davis, Robert A., 265
Davis, R. C., 308
Dennis, Wayne, 284
Deri, Susan K., 286
DiMichael, S. G., 342
Dressel, Paul L., 266
Dubin, S. S., 283
Dudek, Frank J., 282
Dunlap, Jack W., 275, 335
Ebert, Walter G., 316
Edgerton, Harold A., 313
Edwards, Allen L., 332
Egan, James P., 312
Ehrenfreund, David, 316
Eiserer, Paul E., 271
Ekstein, Rudolf, 265, 271
Ellson, D. G., 339
Ericson, Martha, 272
Espenshade, Ann, 264
Evans, Mary Catherine, 324
Evans, Ralph M., 338
Farber, I. E., 319
Fensterheim, Herbert, 317
Finch, Glen, 306
Findley, Warren G., 281, 287
Fitts, Paul M., 335, 341
Flanagan, John C., 316
Flowerman, Samuel H., 328
Franklin, Joseph C., 329, 330
French, John R. P., Jr., 265
Frenkel-Brunswik, Else, 347
Garner, Wendell R., 290, 335
Gilinsky, Alberta S., 309
Gilliland, A. R., 265, 302
Girden, Edward, 264
Glad, Donald D., 289
Gordon, Norma, 323
Gottsdanker, Robert M., 282
Grant, David A., 348
Gray, Florence, 339
Greene, James E., 281, 287
Grether, Walter F., 340, 348
Grice, G. Robert, 300
Guetzkow, Harold, 329, 330
Guilford, J. P., 305
Haas, Margot, 329
Haggard, Ernest A., 349
Hahn, Milton E., 292, 297, 347
Haire, Mason, 265, 295
Hall, Calvin S., 324
Halstead, Ward C., 265, 337
Hanfmann, Eugenia, 284
Harding, John, 318, 336
Harris, Chester W., 281
Harris, Dale B., 302
Hartmann, George W., 336
Hausman, Howard J., 326
Hebb, D. O., 306
Hemphill, John K., 332
Henneman, Richard H., 302
Henry, Edwin R., 306
Hildreth, Gertrude, 265
Hill, Harris, 339
Hoffman, Arthur C., 347
Hogrefe, Russell, 324
Holt, Robert R., 276, 334
Horn, Daniel, 334
Houtchens, H. Max, 327
Howell, M. V., 351
Hsü, En Hsi, 267
Humes, John F., 338
Humm, Doncaster G., 305
Humm, Kathryn A., 305
Hunt, Howard F., 273
Hunt, J. McV., 273
Hyman, Herbert H., 347
Irwin, Orvis C., 314
Jacobsen, Carlyle, 284
Jahoda, Marie, 322
Janowitz, M., 323
Jaques, Elliott, 265
Jenkins, John G., 284, 316
Jensen, Milton B., 277
Johnson, Donald M., 266
Johnson, E. Parker, 293, 294
Jones, Harold E., 264, 335, 349
Kaplon, Martin D., 335
Kappauf, William E., 349
Katz, Daniel, 275, 347
Kellogg, W. N., 264, 337
Kelly, E. Lowell, 295, 334
Kelly, George A., 284
Kendall, William E., 297
Kende, T. Norbert, 277
Kendler, Howard H., 300
Kennedy, John L., 331, 335
Keys, Ancel, 329, 330
Kilpatrick, Franklin P., 332
Kimble, G. A., 312
Kinder, Elaine F., 267
Kogan, Leonard S., 309
Kornhauser, Arthur, 329
Krech, David, 265
Lacey, John I., 343
Lacey, Oliver L., 349
Landon, John Fitch, 273
Langfeld, Herbert S., 300
Lawrence, Douglas H., 303
Lawshe, C. H., 339
Lawton, George, 347
Lazarsfeld, Paul F., 306
Leatherman, C. D., 306
Lee, Alfred McClung, 280
Leeper, Robert, 316
Lehman, Harvey C., 347
Leuba, Clarence, 295

Levy, David M., 269
Levinson, Daniel J., 288
Lindsley, Donald B., 275
Lippitt, Ronald, 265
Lorge, Irving, 335
Loucks, Roger Brown, 345
Lundin, Robert W., 350
McCulloch, Warren S., 265
McGinnies, Elliott, 285
MacMillan, John W., 306
Mahl, George F., 344
Maier, Norman R. F., 265
Malmo, Robert B., 344
Markey, Stanley C., 310
Marquis, Donald G., 296, 306, 338
Marshall, Helen, 289
Martin, Hermon W., 277
Matheny, W. Guy, 332
Mathews, W. Mason, 315
Maurer, Katharine M., 334
Mayman, Martin, 270
Mead, Leonard C., 306
Meister, Ralph K., 285
Melton, Arthur W., 306
Meyerson, Lee, 291
Miles, Walter R., 335
Miller, George A., 291
Miller, James G., 273, 306
Miller, Neal E., 303
Mitchell, Philip H., 302
Moore, Herbert, 321
Moore, Joseph E., 297
Moore, Thomas V., 267
Mowrer, O. H., 279
Munn, Norman L., 275
Newcomb, Theodore, 265
Newland, T. Ernest, 316
Norman, Ralph D., 313
Older, Harry G., 306
Olson, Willard C., 275
Page, Howard E., 326
Patton, R. A., 320
Peak, Helen, 338
Pedersen, Ruth A., 350
Pepinsky, Harold B., 292, 347
Pepinsky, Pauline N., 292
Pfaffmann, Carl, 295
Phillips, E. L., 274
Pollack, Irwin, 290
Postman, Leo, 285, 312
Potter, Elmer H., 269
Prentice, W. C. H., 316
Pressey, Sidney L., 338, 347
Rabin, Albert I., 284
Rashkis, Harold A., 283
Redl, Fritz, 265
Reese, T. W., 298
Remmers, H. H., 347
Richardson, Marion W., 316, 343
Riesen, Austin H., 264, 307
Riess, Bernard F., 325
Riggs, Lorrin A., 294
Roberts, S. O., 314
Robinson, Harvey A., 276
Roeder, Wesley S., 351
Roff, Merrill F., 306
Rogers, Carl R., 317, 338
Rosenwald, Alan K., 270
Ross, Elizabeth, 273
Rotter, Julian B., 333
Ruch, Floyd L., 295
Rulon, Phillip J., 334
Rust, Ralph, 269
Ryans, David, 273
Sackett, Robert S., 299
Saenger, Gerhart, 323
Sanford, R. Nevitt, 327
Sarason, Seymour B., 269
Schiller, Paul H., 308
Schlosberg, Harold, 295
Schneider, Dorothy E., 348
Scholl, Charles E., Jr., 338
Schoolland, J. B., 265
Schwartz, Bert D., 274
Scott, J. P., 324
Searle, Lloyd V., 320, 335
Seidenfeld, Morton A., 274
Seitz, Clifford P., 335
Selltiz, Claire, 336
Shaffer, Laurance F., 273, 275
Shagass, Charles, 344
Shakow, David, 284
Shartle, Carroll, 284
Sherif, Muzafer, 280
Shils, E. A., 323
Shock, N. W., 335
Shor, Joel, 276
Siegel, Paul S., 349
Skeels, Harold M., 278
Skodak, Marie, 278
Smith, Karl U., 266
Snygg, Donald, 304
Solomon, Richard L., 301
Solomon, R. S., 347
Sparks, Charles P., 341
Speer, George S., 341
Stafford, John W., 267
Starch, Daniel, 321
Staton, Thomas F., 281
Stein, Morris I., 284
Stellar, Eliot, 325
Stevens, S. S., 335
Stewart, Naomi, 268
Stogdill, Ralph M., 316
Stone, L. Joseph, 264
Symonds, Percival M., 272, 288
Tamulonis, Valerie M., 328
Taylor, Donald W., 313
Taylor, Franklin V., 306, 340
Templin, Mildred C., 278
Thaler, M., 283
Thiesen, J. Warren, 285
Thompson, Helen, 273
Thorne, Frederick C., 295
Thurstone, L. L., 275
Travers, Robert M. W., 334
Travis, Roland C., 331
Triggs, Frances Oralind, 296
Trowbridge, Lowell S., 322
Tucker, Anthony C., 306
Twitchell-Allen, Doris, 271, 295, 347
VanDusen, Albert C., 333
Van Saun, H. Richard, 332
Vernier, C. M., 351
Walker, Robert Y., 332
Warrick, Melvin J., 345
Waters, R. H., 307
Webb, Wilse B., 303
Wechsler, David, 284, 335
Wells, F. L., 284
Wessell, Nils Y., 347
Wherry, Robert J., 298
White, Ralph K., 269
Wickens, Delos D., 309, 333
Wiener, Daniel N., 274, 296, 347
Williams, A. C., Jr., 348
Williams, Stanley B., 347
Winder, Clarence L., 273
Witt, Governor, 324
Wittman, Phyllis, 283
Witty, Paul A., 295
Wolfle, Dael, 338
Wyatt, Frederick, 280
Young, Robert, 306
Zubin, Joseph, 269

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 | September, 1947 | Number 9

In this Issue

Carl R. Rogers 357

Some Observations on the Organization of Personality: CARL R. ROGERS. 358

Psychological Boners: W. LESLIE BARNETTE, JR. 369

Visitor to America: F. C. BARTLETT 372

Research Reports of the AAF Aviation Psychology Program: JOHN C. FLANAGAN 375

A Bibliography on Careers in Psychology: GEORGE J. DUDYCHA 376

A Laboratory Period in the First Course in Psychology: HAROLD SCHLOSBERG 384

Across the Secretary's Desk 388

Psychological Notes and News 389

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Eugenia Norris, *Managing Editor*

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

DONALD G. MARQUIS
University of Michigan
Ann Arbor

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
ERNEST R. HILGARD Stanford University California	HELEN PEAK Connecticut College New London	WILLARD L. VALENTINE 1515 Massachusetts Ave., N.W. Washington 5, D. C.	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

JOHN F. DASHIELL — CLARENCE H. GRAHAM
RICHARD M. ELLIOTT — LAURANCE F. SHAFFER
ROBERT R. SEARS

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.
Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.
Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.
Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.
Subscription: $3.00 (Foreign $3.50). Single copies, $.60.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, P.O. Box 33, Geneva, New York. Contains noncritical abstracts of the world's literature in psychology and related subjects; monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.
Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.
Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

CARL R. ROGERS

Professor of Psychology, University of Chicago

President of the American Psychological Association, 1947

SOME OBSERVATIONS ON THE ORGANIZATION OF PERSONALITY[1]

CARL R. ROGERS

University of Chicago

IN VARIOUS fields of science rapid strides have been made when direct observation of significant processes has become possible. In medicine, when circumstances have permitted the physician to peer directly into the stomach of his patient, understanding of digestive processes has increased and the influence of emotional tension upon all aspects of that process has been more accurately observed and understood. In our work with nondirective therapy we often feel that we are having a psychological opportunity comparable to this medical experience—an opportunity to observe directly a number of the effective processes of personality. Quite aside from any question regarding nondirective therapy as therapy, here is a precious vein of observational material of unusual value for the study of personality.

CHARACTERISTICS OF THE OBSERVATIONAL MATERIAL

There are several ways in which the raw clinical data to which we have had access is unique in its value for understanding personality. The fact that these verbal expressions of inner dynamics are preserved by electrical recording makes possible a detailed analysis of a sort not heretofore possible. Recording has given us a microscope by which we may examine at leisure, and in minute detail, almost every aspect of what was, in its occurrence, a fleeting moment impossible of accurate observation.

Another scientifically fortunate characteristic of this material is the fact that the verbal productions of the client are biased to a minimal degree by the therapist. Material from client-centered interviews probably comes closer to being a "pure" expression of attitudes than has yet been achieved through other means. One can read through a complete recorded case or listen to it, without finding more than a half-dozen instances in which the therapist's views on any point are evident. One would find it impossible to form an estimate as to the therapist's views about personality dynamics. One could not determine his diagnostic views, his standards of behavior, his social class. The one value or standard held by the therapist which would exhibit itself in his tone of voice, responses, and activity, is a deep respect for the personality and attitudes of the client as a separate person. It is difficult to see how this would bias the content of the interview, except to permit deeper expression than the client would ordinarily allow himself. This almost complete lack of any distorting attitude is felt, and sometimes expressed by the client. One woman says:

> "It's almost impersonal. I like you—of course I don't know why I should like you or why I shouldn't like you. It's a peculiar thing. I've never had that relationship with anybody before and I've often thought about it. . . . A lot of times I walk out with a feeling of elation that you think highly of me, and of course at the same time I have the feeling that 'Gee, he must think I'm an awful jerk' or something like that. But it doesn't really - those feelings aren't so deep that I can form an opinion one way or the other about you."

Here it would seem that even though she would like to discover some type of evaluational attitude, she is unable to do so. Published studies and research as yet unpublished bear out this point that counselor responses which are in any way evaluational or distorting as to content are at a minimum, thus enhancing the worth of such interviews for personality study.

The counselor attitude of warmth and understanding, well described by Snyder (9) and Rogers (8), also helps to maximize the freedom of expression by the individual. The client experiences

[1] Address of the retiring President of the American Psychological Association delivered at the September 1947 Annual Meeting.

sufficient interest in him as a person, and sufficient acceptance, to enable him to talk openly, not only about surface attitudes, but increasingly about intimate attitudes and feelings hidden even from himself. Hence in these recorded interviews we have material of very considerable depth so far as personality dynamics is concerned, along with a freedom from distortion.

Finally the very nature of the interviews and the techniques by which they are handled give us a rare opportunity to see to some extent through the eyes of another person—to perceive the world as it appears to him, to achieve at least partially, the internal frame of reference of another person. We see his behavior through his eyes, and also the psychological meaning which it had for him. We see also changes in personality and behavior, and the meanings which those changes have for the individual. We are admitted freely into the backstage of the person's living where we can observe from within some of the dramas of internal change, which are often far more compelling and moving than the drama which is presented on the stage viewed by the public. Only a novelist or a poet could do justice to the deep struggles which we are permitted to observe from within the client's own world of reality.

This rare opportunity to observe so directly and so clearly the inner dynamics of personality is a learning experience of the deepest sort for the clinician. Most of clinical psychology and psychiatry involves judgements *about* the individual, judgements which must, of necessity, be based on some framework brought to the situation by the clinician. To try continually to see and think *with* the individual, as in client-centered therapy, is a mindstretching experience in which learning goes on apace because the clinician brings to the interview no pre-determined yardstick by which to judge the material.

I wish in this paper to try to bring you some of the clinical observations which we have made as we have repeatedly peered through these psychological windows into personality, and to raise with you some of the questions about the organization of personality which these observations have forced upon us. I shall not attempt to present these observations in logical order, but rather in the order in which they impressed themselves upon our notice. What I shall offer is not a series of research findings, but only the first step in that process of gradual approximation which we call science, a description of some observed phenomena which appear to be significant, and some highly tentative explanations of these phenomena.

THE RELATION OF THE ORGANIZED PERCEPTUAL FIELD TO BEHAVIOR

One simple observation, which is repeated over and over again in each successful therapeutic case, seems to have rather deep theoretical implications. It is that as changes occur in the perception of self and in the perception of reality, changes occur in behavior. In therapy, these perceptual changes are more often concerned with the self than with the external world. Hence we find in therapy that as the perception of self alters, behavior alters. Perhaps an illustration will indicate the type of observation upon which this statement is based.

A young woman, a graduate student whom we shall call Miss Vib, came in for nine interviews. If we compare the first interview with the last, striking changes are evident. Perhaps some features of this change may be conveyed by taking from the first and last interviews all the major statements regarding self, and all the major statements regarding current behavior. In the first interview, for example, her perception of herself may be crudely indicated by taking all her own statements about herself, grouping those which seem similar, but otherwise doing a minimum of editing, and retaining so far as possible, her own words. We then come out with this as the conscious perception of self which was hers at the outset of counseling.

> "I feel disorganized, muddled; I've lost all direction; my personal life has disintegrated.
>
> "I sorta experience things from the forefront of my consciousness, but nothing sinks in very deep; things don't seem real to me; I feel nothing matters; I don't have any emotional response to situations; I'm worried about myself.
>
> "I haven't been acting like myself; it doesn't seem like me; I'm a different person altogether from what I used to be in the past.
>
> "I don't understand myself; I haven't known what was happening to me.
>
> "I have withdrawn from everything, and feel all right only when I'm all alone and no one can expect me to do things.
>
> "I don't care about my personal appearance.

"I don't know *anything* anymore.
"I feel guilty about the things I have left undone.
"I don't think I could ever assume responsibility for anything."

If we attempt to evaluate this picture of self from an external frame of reference various diagnostic labels may come to mind. Trying to perceive it solely from the client's frame of reference we observe that to the young woman herself she appears disorganized, and not herself. She is perplexed and almost unacquainted with what is going on in herself. She feels unable and unwilling to function in any responsible or social way. This is at least a sampling of the way she experiences or perceives her self.

Her behavior is entirely consistent with this picture of self. If we abstract all her statements describing her behavior, in the same fashion as we abstracted her statements about self, the following pattern emerges—a pattern which in this case was corroborated by outside observation.

"I couldn't get up nerve to come in before; I haven't availed myself of help.
"Everything I should do or want to do, I don't do.
"I haven't kept in touch with friends; I avoid making the effort to go with them; I stopped writing letters home; I don't answer letters or telephone calls; I avoid contacts that would be professionally helpful; I didn't go home though I said I would.
"I failed to hand in my work in a course though I had it all done; I didn't even buy clothing that I needed; I haven't even kept my nails manicured.
"I didn't listen to material we were studying; I waste hours reading the funny papers; I can spend the whole afternoon doing absolutely nothing."

The picture of behavior is very much in keeping with the picture of self, and is summed up in the statement that "Everything I should do or want to do, I don't do." The behavior goes on, in ways that seem to the individual beyond understanding and beyond control.

If we contrast this picture of self and behavior with the picture as it exists in the ninth interview, thirty-eight days later, we find both the perception of self and the ways of behaving deeply altered. Her statements about self are as follows:

"I'm feeling much better; I'm taking more interest in myself.
"I do have some individuality, some interests.
"I seem to be getting a newer understanding of myself. I can look at myself a little better.
"I realize I'm just one person, with so much ability, but I'm not worried about it; I can accept the fact that I'm not always right.
"I feel more motivation, have more of a desire to go ahead.
"I still occasionally regret the past, though I feel less unhappy about it; I still have a long ways to go; I don't know whether I can keep the picture of myself I'm beginning to evolve.
"I can go on learning—in school or out.
"I do feel more like a normal person now; I feel more I can handle my life myself; I think I'm at the point where I can go along on my own."

Outstanding in this perception of herself are three things—that she knows herself, that she can view with comfort her assets and liabilities, and finally that she has drive and control of that drive.

In this ninth interview the behavioral picture is again consistent with the perception of self. It may be abstracted in these terms.

"I've been making plans about school and about a job; I've been working hard on a term paper; I've been going to the library to trace down a topic of special interest and finding it exciting.
"I've cleaned out my closets; washed my clothes.
"I finally wrote my parents; I'm going home for the holidays.
"I'm getting out and mixing with people; I am reacting sensibly to a fellow who is interested in me—seeing both his good and bad points.
"I will work toward my degree; I'll start looking for a job this week."

Her behavior, in contrast to the first interview, is now organized, forward-moving, effective, realistic and planful. It is in accord with the realistic and organized view she has achieved of her self.

It is this type of observation, in case after case, that leads us to say with some assurance that as perceptions of self and reality change, behavior changes. Likewise, in cases we might term failures, there appears to be no appreciable change in perceptual organization or in behavior.

What type of explanation might account for these concomitant changes in the perceptual field and the behavioral pattern? Let us examine some of the logical possibilities.

In the first place, it is possible that factors unrelated to therapy may have brought about the altered perception and behavior. There may have been physiological processes occurring which pro-

duced the change. There may have been alterations in the family relationships, or in the social forces, or in the educational picture or in some other area of cultural influence, which might account for the rather drastic shift in the concept of self and in the behavior.

There are difficulties in this type of explanation. Not only were there no known gross changes in the physical or cultural situation as far as Miss Vib was concerned, but the explanation gradually becomes inadequate when one tries to apply it to the many cases in which such change occurs. To postulate that some external factor brings the change and that only by chance does this period of change coincide with the period of therapy, becomes an untenable hypothesis.

Let us then look at another explanation, namely that the therapist exerted, during the nine hours of contact, a peculiarly potent cultural influence which brought about the change. Here again we are faced with several problems. It seems that nine hours scattered over five and one-half weeks is a very minute portion of time in which to bring about alteration of patterns which have been building for thirty years. We would have to postulate an influence so potent as to be classed as traumatic. This theory is particularly difficult to maintain when we find, on examining the recorded interviews, that not once in the nine hours did the therapist express any evaluation, positive or negative, of the client's initial or final perception of self, or her initial or final mode of behavior. There was not only no evaluation, but no standards expressed by which evaluation might be inferred.

There was, on the part of the therapist, evidence of warm interest in the individual, and thoroughgoing acceptance of the self and of the behavior as they existed initially, in the intermediate stages, and at the conclusion of therapy. It appears reasonable to say that the therapist established certain definite conditions of interpersonal relations, but since the very essence of this relationship is respect for the person as he is at that moment, the therapist can hardly be regarded as a cultural force making for change.

We find ourselves forced to a third type of explanation, a type of explanation which is not new to psychology, but which has had only partial acceptance. Briefly it may be put that the observed phenomena of change seem most adequately explained by the hypothesis that *given certain psychological conditions, the individual has the capacity to reorganize his field of perception, including the way he perceives himself, and that a concomitant or a resultant of this perceptual reorganization is an appropriate alteration of behavior.* This puts into formal and objective terminology a clinical hypothesis which experience forces upon the therapist using a client-centered approach. One is compelled through clinical observation to develop a high degree of respect for the ego-integrative forces residing within each individual. One comes to recognize that under proper conditions the self is a basic factor in the formation of personality and in the determination of behavior. Clinical experience would strongly suggest that the self is, to some extent, an architect of self, and the above hypothesis simply puts this observation into psychological terms.

In support of this hypothesis it is noted in some cases that one of the concomitants of success in therapy is the realization on the part of the client that the self has the capacity for reorganization. Thus a student says:

> "You know I spoke of the fact that a person's background retards one. Like the fact that my family life wasn't good for me, and my mother certainly didn't give me any of the kind of bringing up that I should have had. Well, I've been thinking that over. It's true up to a point. But when you get so that you can see the situation, then it's really up to you."

Following this statement of the relation of the self to experience many changes occurred in this young man's behavior. In this, as in other cases, it appears that when the person comes to see himself as the perceiving, organizing agent, then reorganization of perception and consequent change in patterns of reaction take place.

On the other side of the picture we have frequently observed that when the individual has been authoritatively told that he is governed by certain factors or conditions beyond his control, it makes therapy more difficult, and it is only when the individual discovers for himself that he can organize his perceptions that change is possible. In veterans who have been given their own psychiatric diagnosis, the effect is often that of making the individual feel that he is under an unalterable doom, that he is unable to control the organization of his life. When

however the self sees itself as capable of reorganizing its own perceptual field, a marked change in basic confidence occurs. Miss Nam, a student, illustrates this phenomenon when she says, after having made progress in therapy:

> "I think I do feel better about the future, too, because it's as if I won't be acting in darkness. It's sort of, well, knowing somewhat why I act the way I do . . . and at least it isn't the feeling that you're simply out of your own control and the fates are driving you to act that way. If you realize it, I think you can do something more about it."

A veteran at the conclusion of counseling puts it more briefly and more positively: "My attitude toward myself is changed now to where I feel I *can* do something with my self and life." He has come to view himself as the instrument by which some reorganization can take place.

There is another clinical observation which may be cited in support of the general hypothesis that there is a close relationship between behavior and the way in which reality is viewed by the individual. It has been noted in many cases that behavior changes come about for the most part imperceptibly and almost automatically, once the perceptual reorganization has taken place. A young wife who has been reacting violently to her maid, and has been quite disorganized in her behavior as a result of this antipathy, says "After I . . . discovered it was nothing more than that she resembled my mother, she didn't bother me any more. Isn't that interesting? She's still the same." Here is a clear statement indicating that though the basic perceptions have not changed, they have been differently organized, have acquired a new meaning, and that behavior changes then occur. Similar evidence is given by a client, a trained psychologist, who after completing a brief series of client-centered interviews, writes:

> "Another interesting aspect of the situation was in connection with the changes in some of my attitudes. When the change occurred, it was as if earlier attitudes were wiped out as completely as if erased from a blackboard. . . . When a situation which would formerly have provoked a given type of response occurred, it was not as if I was tempted to act in the way I formerly had but in some way found it easier to control my behavior. Rather the new type of behavior came quite spontaneously, and it was only through a deliberate analysis that I became aware that I was acting in a new and different way."

Here again it is of interest that the imagery is put in terms of visual perception and that as attitudes are "erased from the blackboard" behavioral changes take place automatically and without conscious effort.

Thus we have observed that appropriate changes in behavior occur when the individual acquires a different view of his world of experience, including himself; that this changed perception does not need to be dependent upon a change in the "reality," but may be a product of internal reorganization; that in some instances the awareness of the capacity for reperceiving experience accompanies this process of reorganization; that the altered behavioral responses occur automatically and without conscious effort as soon as the perceptual reorganization has taken place, apparently as a result of this.

In view of these observations a second hypothesis may be stated, which is closely related to the first. It is that *behavior is not directly influenced or determined by organic or cultural factors, but primarily,* (and perhaps only,) *by the perception of these elements.* In other words the crucial element in the determination of behavior is the perceptual field of the individual. While this perceptual field is, to be sure, deeply influenced and largely shaped by cultural and physiological forces, it is nevertheless important that it appears to be only the field as it is *perceived,* which exercises a specific determining influence upon behavior. This is not a new idea in psychology, but its implications have not always been fully recognized.

It might mean, first of all, that if it is the perceptual field which determines behavior, then the primary object of study for psychologists would be the person and his world *as viewed by the person himself.* It could mean that the internal frame of reference of the person might well constitute the field of psychology, an idea set forth persuasively by Snygg and Combs in a significant manuscript as yet unpublished. It might mean that the laws which govern behavior would be discovered more deeply by turning our attention to the laws which govern perception.

Now if our speculations contain a measure of truth, if the *specific* determinant of behavior is the perceptual field, and if the self can reorganize that perceptual field, then what are the limits of this process? Is the reorganization of perception capri-

cious, or does it follow certain laws? Are there limits to the degree of reorganization? If so, what are they? In this connection we have observed with some care the perception of one portion of the field of experience, the portion we call the self.

THE RELATION OF THE PERCEPTION OF THE SELF TO ADJUSTMENT

Initially we were oriented by the background of both lay and psychological thinking to regard the outcome of successful therapy as the solution of problems. If a person had a marital problem, a vocational problem, a problem of educational adjustment, the obvious purpose of counseling or therapy was to solve that problem. But as we observe and study the recorded accounts of the conclusion of therapy, it is clear that the most characteristic outcome is not necessarily solution of problems, but a freedom from tension, a different feeling about, and perception of, self. Perhaps something of this outcome may be conveyed by some illustrations.

Several statements taken from the final interview with a twenty year old young woman, Miss Mir, give indications of the characteristic attitude toward self, and the sense of freedom which appears to accompany it.

> "I've always tried to be what the others thought I should be, but now I am wondering whether I shouldn't just see that I am what I am."
>
> "Well, I've just noticed such a difference. I find that when I feel things, even when I feel hate, I don't care. I don't mind. I feel more free somehow. I don't feel guilty about things."
>
> "You know it's suddenly as though a big cloud has been lifted off. I feel so much more content."

Note in these statements the willingness to perceive herself as she is, to accept herself "realistically," to perceive and accept her "bad" attitudes as well as "good" ones. This realism seems to be accompanied by a sense of freedom and contentment.

Miss Vib, whose attitudes were quoted earlier, wrote out her own feelings about counseling some six weeks after the interviews were over, and gave the statement to her counselor. She begins:

> "The happiest outcome of therapy has been a new feeling about myself. As I think of it, it might be the only outcome. Certainly it is basic to all the changes in my behavior that have resulted." In discussing her experience in therapy she states, "I was coming to see myself as a whole. I began to realize that I am *one* person. This was an important insight to me. I saw that the former good academic achievement, job success, ease in social situations, and the present withdrawal, dejection, apathy and failure were all adaptive behavior, performed be *me*. This meant that I had to reorganize my feelings about myself, no longer holding to the unrealistic notion that the very good adjustment was the expression of the real "me" and this neurotic behavior was not. I came to feel that I am the same person, sometimes functioning maturely, and sometimes assuming a neurotic role in the face of what I had conceived as insurmountable problems. The acceptance of myself as one person gave me strength in the process of reorganization. Now I had a substratum, a core of unity on which to work." As she continues her discussion there are such statements as "I am getting more happiness in being myself." "I approve of myself more, and I have so much less anxiety."

As in the previous example, the outstanding aspects appear to be the realization that all of her behavior "belonged" to her, that she could accept both the good and bad features about herself and that doing so gave her a release from anxiety and a feeling of solid happiness. In both instances there is only incidental reference to the serious "problems" which had been initially discussed.

Since Miss Mir is undoubtedly above average intelligence and Miss Vib is a person with some psychological training, it may appear that such results are found only with the sophisticated individual. To counteract this opinion a quotation may be given from a statement written by a veteran of limited ability and education who had just completed counseling, and was asked to write whatever reactions he had to the experience. He says:

> "As for the consoleing I have had I can say this, It really makes a man strip his own mind bare, and when he does he knows then what he realy is and what he can do. Or at least thinks he knows himself party well. As for myself, I know that my ideas were a little too big for what I realy am, but now I realize one must try start out at his own level.
>
> "Now after four visits, I have a much clearer picture of myself and my future. It makes me feel a little depressed and disappointed, but on the other hand, it has taken me out of the dark, the load seems a lot lighter now, that is I can see my way now, I know what I want to do, I know about what I can do, so now that I can see my goal, I will be able to work a whole lot easyer, at my own level."

Although the expression is much simpler one notes again the same two elements—the acceptance

of self as it is, and the feeling of easiness, of lightened burden, which accompanies it.

As we examine many individual case records and case recordings, it appears to be possible to bring together the findings in regard to successful therapy by stating another hypothesis in regard to that portion of the perceptual field which we call the self. It would appear that *when all of the ways in which the individual perceives himself—all perceptions of the qualities, abilities, impulses, and attitudes of the person, and all perceptions of himself in relation to others—are accepted into the organized conscious concept of the self, then this achievement is accompanied by feelings of comfort and freedom from tension which are experienced as psychological adjustment.*

This hypothesis would seem to account for the observed fact that the comfortable perception of self which is achieved is sometimes more positive than before, sometimes more negative. When the individual permits all his perceptions of himself to be organized into one pattern, the picture is sometimes more flattering than he has held in the past, sometimes less flattering. It is always more comfortable.

It may be pointed out also that this tentative hypothesis supplies an operational type of definition, based on the client's internal frame of reference, for such hitherto vague terms as "adjustment," "integration," and "acceptance of self." They are defined in terms of perception, in a way which it should be possible to prove or disprove. When all of the organic perceptual experiences—the experiencing of attitudes, impulses, abilities and disabilities, the experiencing of others and of "reality" —when all of these perceptions are freely assimilated into an organized and consistent system, available to consciousness, then psychological adjustment or integration might be said to exist. The definition of adjustment is thus made an internal affair, rather than dependent upon an external "reality."

Something of what is meant by this acceptance and assimilation of perceptions about the self may be illustrated from the case of Miss Nam, a student. Like many other clients she gives evidence of having experienced attitudes and feelings which are defensively denied because they are not consistent with the concept or picture she holds of herself. The way in which they are first fully admitted into consciousness, and then organized into a unified system may be shown by excerpts from the recorded interviews. She has spoken of the difficulty she has had in bringing herself to write papers for her university courses.

> "I just thought of something else which perhaps hinders me, and that is that again it's two different feelings. When I have to sit down and do (a paper), though I have a lot of ideas, underneath I think I always have the feeling that I just can't do it. . . . I have this feeling of being terrifically confident that I can do something, without being willing to put the work into it. At other times I'm practically afraid of what I have to do. . . ."

Note that the conscious self has been organized as "having a lot of ideas," being "terrifically confident" but that "underneath," in other words not freely admitted into consciousness, has been the experience of feeling "I just can't do it." She continues:

> "I'm trying to work through this funny relationship between this terrific confidence and then this almost fear of doing anything. . .and I think the kind of feeling that I can really do things is part of an illusion I have about myself of being, in my imagination, sure that it will be something good and very good and all that, but whenever I get down to the actual task of getting started, it's a terrible feeling of—well, incapacity, that I won't get it done either the way I want to do it, or even not being sure how I want to do it."

Again the picture of herself which is present in consciousness is that of a person who is "very good," but this picture is entirely out of line with the actual organic experience in the situation.

Later in the same interview she expresses very well the fact that her perceptions are not all organized into one consistent conscious self.

> "I'm not sure about what kind of a person I am—well, I realize that all of these are a part of me, but I'm not quite sure of how to make all of these things fall in line."

In the next interview we have an excellent opportunity to observe the organization of both of these conflicting perceptions into one pattern, with the resultant sense of freedom from tension which has been described above.

> "It's very funny, even as I sit here I realize that I have more confidence in myself, in the sense that when I used to approach new situations I would have two very funny things operating at the same time. I had a fantasy that I could do anything, which was a fantasy which covered over all these other feelings that I really couldn't do it, or couldn't do it as well as I wanted to, and it's

> as if now those two things have merged together, and it is more real, that a situation isn't either testing myself or proving something to myself or anyone else. It's just in terms of doing it. And I think I have done away both with that fantasy and that fear. . . . So I think I can go ahead and approach things—well, just sensibly."

No longer is it necessary for this client to "cover over" her real experiences. Instead the picture of herself as very able, and the experienced feeling of complete inability, have now been brought together into one integrated pattern of self as a person with real, but imperfect abilities. Once the self is thus accepted the inner energies making for self-actualization are released and she attacks her life problems more efficiently.

Observing this type of material frequently in counseling experience would lead to a tentative hypothesis of maladjustment, which like the other hypothesis suggested, focuses on the perception of self. It might be proposed that the tensions called psychological maladjustment exist when the organized concept of self (conscious or available to conscious awareness) is not in accord with the perceptions actually experienced.

This discrepancy between the concept of self and the actual perceptions seems to be explicable only in terms of the fact that the self concept resists assimilating into itself any percept which is inconsistent with its present organization. The feeling that she may not have the ability to do a paper is inconsistent with Miss Nam's conscious picture of herself as a very able and confident person, and hence, though fleetingly perceived, is denied organization as a part of her self, until this comes about in therapy.

THE CONDITIONS OF CHANGE OF SELF PERCEPTION

If the way in which the self is perceived has as close and significant a relationship to behavior as has been suggested, then the manner in which this perception may be altered becomes a question of importance. If a reorganization of self-perceptions brings a change in behavior; if adjustment and maladjustment depend on the congruence between perceptions as experienced and the self as perceived, then the factors which permit a reorganization of the perception of self are significant.

Our observations of psychotherapeutic experience would seem to indicate that absence of any threat to the self-concept is an important item in the problem. Normally the self resists incorporating into itself those experiences which are inconsistent with the functioning of self. But a point overlooked by Lecky and others is that when the self is free from any threat of attack or likelihood of attack, then it is possible for the self to consider these hitherto rejected perceptions, to make new differentiations, and to reintegrate the self in such a way as to include them.

An illustration from the case of Miss Vib may serve to clarify this point. In her statement written six weeks after the conclusion of counseling Miss Vib thus describes the way in which unacceptable percepts become incorporated into the self. She writes:

> "In the earlier interviews I kept saying such things as, 'I am not acting like myself', 'I never acted this way before.' What I meant was that this withdrawn, untidy, and apathetic person was not myself. Then I began to realize that I was the same person, seriously withdrawn, etc. now, as I had been before. That did not happen until after I had talked out my self-rejection, shame, despair, and doubt, in the accepting situation of the interview. The counselor was not startled or shocked. I was telling him all these things about myself which did not fit into my picture of a graduate student, a teacher, a sound person. He responded with complete acceptance and warm interest without heavy emotional overtones. Here was a sane, intelligent person wholeheartedly accepting this behavior that seemed so shameful to me. I can remember an organic feeling of relaxation. I did not have to keep up the struggle to cover up and hide this shameful person."

Note how clearly one can see here the whole range of denied perceptions of self, and the fact that they could be considered as a part of self only in a social situation which involved no threat to the self, in which another person, the counselor, becomes almost an alternate self and looks with understanding and acceptance upon these same perceptions. She continues:

> "Retrospectively, it seems to me that what I felt as 'warm acceptance without emotional overtones' was what I needed to work through my difficulties. . . . The counselor's impersonality with interest allowed me to talk out my feelings. The clarification in the interview situation presented the attitude to me as a 'ding an sich' which I could look at, manipulate, and put in place. In organizing my attitudes, I was beginning to organize me."

Here the nature of the exploration of experience, of seeing it as experience and not as a threat to self,

enables the client to reorganize her perceptions of self, which as she says was also "reorganizing me."

If we attempt to describe in more conventional psychological terms the nature of the process which culminates in an altered organization and integration of self in the process of therapy it might run as follows. The individual is continually endeavoring to meet his needs by reacting to the field of experience as he perceives it, and to do that more efficiently by differentiating elements of the field and reintegrating them into new patterns. Reorganization of the field may involve the reorganization of the self as well as of other parts of the field. The self, however, resists reorganization and change. In everyday life individual adjustment by means of reorganization of the field exclusive of the self is more common and is less threatening to the individual. Consequently, the individual's first mode of adjustment is the reorganization of that part of the field which does not include the self.

Client-centered therapy is different from other life situations inasmuch as the therapist tends to remove from the individual's immediate world all those aspects of the field which the individual can reorganize except the self. The therapist, by reacting to the client's feelings and attitudes rather than to the objects of his feelings and attitudes, assists the client in bringing from background into focus his own self, making it easier than ever before for the client to perceive and react to the self. By offering only understanding and no trace of evaluation, the therapist removes himself as an object of attitudes, becoming only an alternate expression of the client's self. The therapist by providing a consistent atmosphere of permissiveness and understanding removes whatever threat existed to prevent all perceptions of the self from emerging into figure. Hence in this situation all the ways in which the self has been experienced can be viewed openly, and organized into a complex unity.

It is then this complete absence of any factor which would attack the concept of self, and second, the assistance in focusing upon the perception of self, which seems to permit a more differentiated view of self and finally the reorganization of self.

RELATIONSHIP TO CURRENT PSYCHOLOGICAL THINKING

Up to this point, these remarks have been presented as clinical observations and tentative hypotheses, quite apart from any relationship to past or present thinking in the field of psychology. This has been intentional. It is felt that it is the function of the clinician to try to observe, with an open-minded attitude, the complexity of material which comes to him, to report his observations, and in the light of this to formulate hypotheses and problems which both the clinic and the laboratory may utilize as a basis for study and research.

Yet, though these are clinical observations and hypotheses, they have, as has doubtless been recognized, a relationship to some of the currents of theoretical and laboratory thinking in psychology. Some of the observations about the self bear a relationship to the thinking of G. H. Mead (7) about the "I" and the "me." The outcome of therapy might be described in Mead's terms as the increasing awareness of the "I," and the organization of the 'me's" by the "I." The importance which has been given in this paper to the self as an organizer of experience and to some extent as an architect of self, bears a relationship to the thinking of Allport (1) and others concerning the increased place which we must give to the integrative function of the ego. In the stress which has been given to the present field of experience as the determinant of behavior, the relationship to Gestalt psychology, and to the work of Lewin (6) and his students is obvious. The theories of Angyal (2) find some parallel in our observations. His view that the self represents only a small part of the biological organism which has reached symbolic elaboration, and that it often attempts the direction of the organism on the basis of unreliable and insufficient information, seems to be particularly related to the observations we have made. Lecky's posthumous book (4), small in size but large in the significance of its contribution, has brought a new light on the way in which the self operates, and the principle of consistency by which new experience is included in or excluded from the self. Much of his thinking runs parallel to our observations. Snygg and Combs (11) have recently attempted a more radical and more complete emphasis upon the internal world of perception as the basis for all psychology, a statement which has helped to formulate a theory in which our observations fit.

It is not only from the realm of theory but also from the experimental laboratory that one finds

confirmation of the line of thinking which has been proposed. Tolman (12) has stressed the need of thinking as a rat if fruitful experimental work is to be done. The work of Snygg (10) indicates that rat behavior may be better predicted by inferring the rat's field of perception than by viewing him as an object. Krech (Krechevsky, 3) showed in a brilliant study some years ago that rat learning can only be understood if we realize that the rat is consistently acting upon one hypothesis after another. Leeper (5) has summarized the evidence from a number of experimental investigations, showing that animal behavior cannot be explained by simple S-R mechanisms, but only by recognizing that complex internal processes of perceptual organization intervene between the stimulus and the behavioral response. Thus there are parallel streams of clinical observation, theoretical thinking, and laboratory experiment, which all point up the fact that for an effective psychology we need a much more complete understanding of the private world of the individual, and need to learn ways of entering and studying that world from within.

IMPLICATIONS

It would be misleading however if I left you with the impression that the hypotheses I have formulated in this paper, or those springing from the parallel psychological studies I have mentioned, are simply extensions of the main stream of psychological thinking, additional bricks in the edifice of psychological thought. We have discovered with some surprise that our clinical observations, and the tentative hypotheses which seem to grow out of them, raise disturbing questions which appear to cast doubt on the very foundations of many of our psychological endeavors, particularly in the fields of clinical psychology and personality study. To clarify what is meant, I should like to restate in more logical order the formulations I have given, and to leave with you certain questions and problems which each one seems to raise.

If we take first the tentative proposition that the specific determinant of behavior is the perceptual field of the individual, would this not lead, if regarded as a working hypothesis, to a radically different approach in clinical psychology and personality research? It would seem to mean that instead of elaborate case histories full of information about the person as an object, we would endeavor to develop ways of seeing his situation, his past, and himself, as these objects appear to him. We would try to see with him, rather than to evaluate him. It might mean the minimizing of the elaborate psychometric procedures by which we have endeavored to measure or value the individual from our own frame of reference. It might mean the minimizing or discarding of all the vast series of labels which we have painstakingly built up over the years. Paranoid, preschizophrenic, compulsive, constricted—terms such as these might become irrelevant because they are all based in thinking which takes an external frame of reference. They are not the ways in which the individual experiences himself. If we consistently studied each individual from the internal frame of reference of that individual, from within his own perceptual field, it seems probable that we should find generalizations which could be made, and principles which were operative, but we may be very sure that they would be of a different order from these externally based judgements *about* individuals.

Let us look at another of the suggested propositions. If we took seriously the hypothesis that integration and adjustment are internal conditions related to the degree of acceptance or nonacceptance of all perceptions, and the degree of organization of these perceptions into one consistent system, this would decidedly affect our clinical procedures. It would seem to imply the abandonment of the notion that adjustment is dependent upon the pleasantness or unpleasantness of the environment, and would demand concentration upon those processes which bring about self-integration within the person. It would mean a minimizing or an abandoning of those clinical procedures which utilize the alteration of environmental forces as a method of treatment. It would rely instead upon the fact that the person who is internally unified has the greatest likelihood of meeting environmental problems constructively, either as an individual or in cooperation with others.

If we take the remaining proposition that the self, under proper conditions, is capable of reorganizing, to some extent, its own perceptual field, and of thus altering behavior, this too seems to raise disturbing questions. Following the path of this hypothesis would appear to mean a shift in emphasis in psychology from focusing upon the

fixity of personality attributes and psychological abilities, to the alterability of these same characteristics. It would concentrate attention upon process rather than upon fixed status. Whereas psychology has, in personality study, been concerned primarily with the measurement of the fixed qualities of the individual, and with his past in order to explain his present, the hypothesis here suggested would seem to concern itself much more with the personal world of the present in order to understand the future, and in predicting that future would be concerned with the principles by which personality and behavior are altered, as well as the extent to which they remain fixed.

Thus we find that a clinical approach, client-centered therapy, has led us to try to adopt the client's perceptual field as the basis for genuine understanding. In trying to enter this internal world of perception, not by introspection, but by observation and direct inference, we find ourselves in a new vantage point for understanding personality dynamics, a vantage point which opens up some disturbing vistas. We find that behavior seems to be better understood as a reaction to this reality-as-perceived. We discover that the way in which the person sees himself, and the perceptions he dares not take as belonging to himself, seem to have an important relationship to the inner peace which constitutes adjustment. We discover within the person, under certain conditions, a capacity for the restructuring and the reorganization of self, and consequently the reorganization of behavior, which has profound social implications. We see these observations, and the theoretical formulations which they inspire, as a fruitful new approach for study and research in various fields of psychology.

REFERENCES

1. ALLPORT, GORDON W. The ego in contemporary psychology. *Psychol. Rev.*, 1943, **50**, 451–478.
2. ANGYAL, ANDRAS. *Foundations for a science of personality*. New York. Commonwealth Fund, 1941.
3. KRECHEVSKY, I. Hypotheses in rats. *Psychol. Rev.*, 1932, **39**, 516–532.
4. LECKY, PRESCOTT *Self-Consistency: A theory of personality*. New York. Island Press, 1945.
5. LEEPER, ROBERT The experimental psychologists as reluctant dragons. Paper presented at APA meeting, September 1946.
6. LEWIN, KURT *A dynamic theory of personality*. New York. McGraw-Hill, 1935.
7. MEAD, GEORGE H. *Mind, self, and society*. Chicago. University of Chicago Press, 1934.
8. ROGERS, CARL R. Significant aspects of client-centered therapy. *Amer. Psychologist*, 1946, **1**, 415–422.
9. SNYDER, W. U. 'Warmth' in nondirective counseling. *J. abnorm. soc. Psychol.*, 1946, **41**, 491–495.
10. SNYGG, DONALD Mazes in which rats take the longer path to food. *J. Psychol.*, 1936, **1**, 153–166.
11. SNYGG, DONALD AND COMBS, ARTHUR W. Book manuscript, loaned to present author. In process of publication. New York. Harper and Bros.
12. TOLMAN, E. C. The determiners of behavior at a choice point. *Psychol. Rev.*, 1938, **45**, 1–41.

PSYCHOLOGICAL BONERS

W. LESLIE BARNETTE, JR.

New York University

THE statements listed here, selected from first year psychology examination papers, are all entirely genuine—genuine even as regards punctuation and spelling. Many of the items simply show a very much garbled interpretation or knowledge of the facts and, as such, they are interesting testimony concerning the phenomenon of inattentiveness and nonchalance that is characteristic of some students. Others display nothing in common with what was originally said in the lecture or discussion; these represent the more creative efforts of some individuals, whose mental processes are sometimes quite baffling even to a sympathetic instructor. Occasionally these statements are pathetically wide of the mark; at other times, although uproariously funny, they may contain some germ of the original idea.

All such statements are from the writer's pre-war teaching experience in various educational institutions in New York State. Given the increased maturity of many present-day university students, it is conceivable that their examination papers will not be as productive of such outrageous statements. Thus, somewhat in the nature of a vintage piece, the following small collection is presented.

One often hears instructors bemoaning the hours spent in the reading of examination papers. This same reading would not be as monotonous if the papers contained a few such choice bits and word salads as given below.

Puberty

Puberty is a condition of adolescence when the individual, a female, has sex knowledge but as yet no sex experience.

Puberty is the state in which a mother is in just before giving birth to a child.

A person is said to be at puberty when he commences to walk and talk, etc.

The period during when embryo is in fetus.

Reliability

What all good tests should have—people too. Reliability is one of the main functions of any experiment, problem or question, or answer. If there is no reliability there is no perfect grade. Also, reliability is an adjective for the character of a person. If in recommending a person to another, and it is said that that person is reliable, it is understood that the person will do the best within his power. Therefore the same is true of an experiment in psychology. If a teacher reads an experiment of a reliable author the class will gain by it. If not, then it is lost time.

Standard Deviation

The standard deviation of a certain thing is that it goes in the normal way. That it functions in the normal way. For example if the thyroid gland secretes its hormone in the average way it would be called a standard deviation. If too slow it is called a hypo deviation of the thyroid.

Hybrids versus Monsters

Hybrids and monsters are caused by sexual intercourse between: for example a donkey and a dog. The offspring does not possess the organs of reproduction.

Hybrids and monsters are individuals whose form and mentality is peculiar to the genus to which they belong. They are usually born into families whose father or mother is a victim of psyfilus or other venerable diseases, etc.

Sex Differences

The sexes differ in the biological functions which they perform. The female is built to perform reproduction. The male is built to perform more difficult operations than the female. He has great muscular ability. Mens endurance to physical hardships is greater. In the process of maturation when boys reach puberty their voices change and they grow a beard. A girl does not.

The male is the stronger of the two and is built more in the shape of a square while the female is built more in a curved shape. The female has a high voice, the male has a deep voice. The female bears the young, while the male merely makes

possible the bearing of young. Males are better at feats of strength.

Habit and Learning

Almost everyone has a habit. . .

. . . There are other habits which are probably learned.

Habit is a thing that a person becomes acquainted with when he uses it enough.

Habits often lessen work and make it easier. Habit formation is bad, but I doubt if there are many individuals who do not have some habits.

It has also been found that a pupil can become so conditioned that without any effort he will go directly to his next class. . . Some psychologists would say this is a habit. (It may be.)

Means of Reducing Rate of Forgetting

Before beginning to learn one should be moderately warm. . .

Also watch out for "blows on the head"—amnesia.

Overlearning: Overlearning is when you have ten stanzas to learn, and you learn fifteen.

Part learning: You learn the first stanza and then you learn the second stanza and by the time you know the second stanza you forget the first stanza.

Hysteria versus Neurasthenia

Hysteria is just a state of getting upset over some happening, while neurasthenia is a disease that takes a week or more to get over. We may be working too hard in school because of some difficulty, and become sick with neurasthenia. If we rest for about two weeks; and then come back to school, our work will probably pick up to better than it was before.

Reciprocal Inhibition

Reciprocal inhibition is making life hard. We go about our career in an underhanded way, and in the end we lose.

Reciprocal inhibition is that instinct when you learn something and it comes back to you.

Reciprocal inhibition is the practice of staying out of work and getting welfare. They can get money for doing nothing so they either won't get jobs, or else they (the welfare-list working people) don't keep them.

Instinct

Present day medical science is doing much to explode the theory of instinct in its description of what a child does in its pregnancy.

Gestalt

The Gestalt school found the theory of transfiguration.

Intelligence

There was a time in France when intelligence was very low and Binet was interested to find out why.

On the Army tests, Army officers scored highest and next came educated persons.

There are three main types of mental deficiency: idiot, imbecile and mormon.

Personalities in Psychology

Sherrington: originated the idea of the scratch reflex in dogs.

Kuo: a Japanese experimenter, and he did an awful lot of experimenting on animals. . . (Lashley): he was an experimenter also. . .

Experimental Extinction

This is the goal of psychology.

Dr. Robert A. Brotemarkle has been kind enough to send in some items from *Psyrology*, a book of psychological boners which the Department of Psychology of the University of Pennsylvania has collected for years. These items are printed below.

Armchair psychology—a seat in which would-be aviators are placed in order to test their sense of equilibrium.

—is the kind of psychology we did in 1-C. We all sat in arm chairs and took tests and then scored them and then studied individual differences.

—is the type of psychology taught at the University of Pennsylvania. Certain facts and fundamentals are talked about in the lectures, then we go to our rooms and sit down to think over what was said.

The PreRolandic fissure has to do with motion. The motion is upside down and vice versa.

In the back of the eyeball we find the rosin cones of the retina.

From a quiz on the brain: Cerebral pinochles.

Without kinaesthesia the human body would be practically useless to the brain.

The pituitary body is also called the hypothesis.

Extirpation is only possible with animals because humans would *probably object.*

The sillier muscles of the eye is responsible for a pupil's relaxation.

From a report on the Muscle-Nerve Experiment: Our records were successful (no doubt partly because we used Dr. N.'s own piece of muscle).

This same principle (use of reaction time in detecting criminals) can be used on a person suspected of suicide and the result would be the same.

The Vernier chronoscope so called because it was first used by Jules Vernier.

This having been done we decapitated the leg of the frog.

The angular gyrus is a priceless possession.

Psychology, although a comparatively young science has gone through many adolescent periods in its development.

A nerve impulse always travels along very smoothly; this is even made a criterion of health in an individual. If the impulse rattles along a nerve in an individual, there is something radically wrong with him.

James Lange gave us a new theory on emotions.

How quickly a person is able to learn certain material depends upon how the person learns the material—either fast or slow, and the length of time the material can be retained.

In the card sorting experiment in the beginning I used my hand, my arm, practically my whole body, especially my head.

In the Mare and Foal test, the puzzle is how the colt gets to its mother thru the puzzle maze.

An IQ of 141 almost always means a Precautious child.

Memory span is the ability to grasp an after image.

From an Opposites test: Reserved—General admission.

Memory span is the theory that if something comes into your mind and goes away, and cannot be brought back, it must be written down.

Clinic—a place where people may receive attention free of charge for a small amount.

In 1916 Binet made a revision of his test. Stanford brought them to this country and thus we have the Stanford Binet.

Competency is an aggregate of many congenial abilities.

Memory span is the ability to grasp an indiscreet amount of ideas in a given moment of attention.

Among the Meninges is the paranoid.

The mean variation is used to tell whether a table has been properly conducted.

Guss Stalt has a theory . . . .

VISITOR TO AMERICA

F. C. BARTLETT

Cambridge University

IT WAS the University of Princeton which brought me to America, and the occasion was one of give and take. Princeton gave me a degree and took some lectures, or at least that is how it might appear on a straight record of fact. Actually Princeton and the people of Princeton were giving me so much all the time that I am vastly in their debt in more ways than I can record, but not least for my memories of its beauty and their friendliness.

After the first ten days I took a train to Providence and Brown University; then to Boston and Harvard, with a visit to Tufts; and then to Washington, Maryland and Baltimore. The National Research Council and the Army Air Service made it possible for me to get to Wright Field and to make the long journey to Randolph Field where I had a chance to see a little of life in Texas and to enjoy weather like an English June, at its best. While I was at Wright Field I had met fellow psychologists from Ohio State, Indiana, and Oxford, and was able to see something of the work at Antioch. Following San Antonio I went to Nashville and then on to Duke and North Carolina Universities, and so back to a meeting of the group of Experimental Psychologists at Princeton. After this I had a day or two at Swarthmore, paid a second swift visit to Philadelphia and went to New Haven and Yale, putting in a morning at Wesleyan University. My final week end I spent with an old psychological friend and his family at Scarsdale, and returned to Princeton now more glorious than ever with its bright spring blossoms. The end was not quite yet. The Eastern Psychological Association was meeting at Atlantic City and somewhat to my own surprise I made a proper tripper's visit there, with that for an excuse. The famous resort was perhaps hardly at its best. It was a shivery sort of day and the place looked a bit pale and melancholy like somebody not quite dressed for a show and putting on finery in a shocking draught. The next day my first trip to America came to an end.

How to write about my experiences I don't really know. I should like to follow up this catalogue of place names by another list of all the old friends whom I met again and all the new friends whom I made, and to try—though it could not be with great success—to tell a little of what they did for me. But it would take too long and even then there would be many I should miss. I must be content to say that I had heard much of American kindness to visitors, but that which I met, everywhere I went, was far greater than I had any right to expect, and far beyond anything I could have imagined. To everybody who in the course of these ten busy weeks, gave me generously of their time, ideas and companionship, I should like to say "Thank you."

If I repay all this by putting down as frankly as I may what were some of the chief impressions which American psychology, as I saw it, made upon me, it must be with certain clear reservations in mind. I am acutely aware that although I saw a lot, I saw nothing for long. Also I have had exceedingly little time to study or ponder over anything. My reflexions are bound to be superficial and may be wrong. A longer view may result in changes of mind, but at least I will try to be as honest as I can for the time being.

Everywhere I went I was impressed by tremendous activity and frequently by beautiful technique. The instrumentation is in general far beyond anything that English psychologists can anywhere at present achieve, even where the skill and the will are available. I hope it will not appear ungracious if I say that I am less sure about the ideas. It seemed to me that sometimes brilliant instrumentation was mistaken for well directed experiment. Speaking very generally, I think that problems are still being developed along the old, conventional lines, and that the methods still remain little different from those of years which to some of us seem to belong to the far past. I fancy that in England in particular we have had more of a rough jolt out of the old ruts, and are searching, though perhaps with little success, for

methods which will retain that accuracy of control which scientific research demands, but will at the same time bring us into more immediate contact with behaviour beyond the laboratory.

There are perhaps three directions in which the differences are most striking, at least to the rather hurried visitor from England.

First there is social psychology. We are all in this field now, but whereas in England the effort seems to be to try to find out what social problems are amenable to an experimental approach, and so to bring the laboratory and the field into closer relationship, I got an impression that a good many social psychologists in America have become unhappily suspicious of the laboratory and are in a way in revolt. In so far as this has led to a much more thorough exploration of possible methods of exact sampling of public opinion I think this has put America a long way ahead of England, and is a definite and fruitful advance. But where, as in my experience often has happened, it means that the two interests fly apart it seems to me bad for both. For example, one of the things that seemed to me to stand out was that American psychologists are at the moment very highly motivated to talk about motivation. Almost wherever I went any results of experiment or observation which appeared difficult to account for were rather gaily set down to motivation. But one never knew what was really meant by this. Very often it turned out that nothing was meant except a reference to a tolerably controllable animal drive, like hunger. There seemed little serious effort to find satisfactory methods for a really scientific study of the many other forms of incentive. This is a search which must surely be made and I think it is little likely to be successful unless the laboratory and social psychologists join forces.

Secondly there is the case of the "clinical psychologist." Here I confess that I am "hot and bothered." If I am to comment on the American situation as I saw it, I must bring in the clinical psychologist, but I am quite sure that my opinions about the whole movement are hazy and muddled. I discussed it everywhere I went and it appeared to me that the views and aims involved are many and varied. In England on the whole one of the strongest moves of the last few years has been an attempt to put the whole clinical study of man on a more definite experimental foundation. In general medicine this is seen in the encouragement and advance of chemotherapy, in experimental nutritional studies, and in many developments of biophysics. In mental pathology it is seen in an increasing demand that the prospective practitioner should have a more thorough training in the psychological laboratory, and that the laboratory for its part should be more in earnest in developing technique and measures adequate to cope with all possible forms of normal behaviour and not alone with those that are set up within its own boundaries, and are exploited at least in part because they happen to be the ones that yield the largest number of quick results. The rapid development of industrial medicine in close alliance with laboratory training in psychology is a part of the same movement.

It seemed necessary to make a brief statement of this background, because it may have distorted my understanding of the American outlook in regard to clinical psychology. As I do understand it, it is an attempt at a rather large scale rapid production of many people who can give tests, of one kind and another, and perhaps even take over some of the therapeutic practices of psychological medicine. It seems to me likely to lay a very great burden upon university teaching and administration in psychology for the next few years. I would guess that it can be successful only if the universities are rigid about their standards, and if they insist that no more students shall be unloaded upon them than their accommodation and staff can deal with adequately.

Even then there is one matter that I frankly do not understand. The scheme seems to accept the view that for a long time to come we are to have communities with a very high incidence of mental illness. If this should not be the case what is to become of the clinical psychologist? If it is, I think a good many people will be inclined to ask what has become of psychology. In fact I often wondered whether the immense amount of energy that is going into this scheme may not be drawing on effort that might at least as profitably be directed in other ways.

Thirdly there is what is called Applied Psychology. Perhaps I saw less of this than I ought to have done, but here, once again, I got the impression that America and England may perhaps be moving in opposite directions. In the one there may be a tendency to sharper division and in the other to closer liaison.

While the far greater numbers involved in America make separation more likely I cannot believe that they make it either necessary or really desirable.

But enough of this. In another few months perhaps I shall see both sides more clearly. It is more to the point to record that everywhere I went I found boundless enthusiasm and activity, and a firm belief in the certainty of rapid developments of psychological study and research. If in other matters America and Britain succeed in understanding one another as well as American and British Psychologists are likely to be able to do, the prospect for the future of the world will not, after all, be as dismal as some folks make it out to be.

I want to end this brief record on a more personal note. To Professor H. S. Langfeld more than to anybody else, I owe this American visit. To him and to Mrs. Langfeld, and through them to the University of Princeton and many of its members and friends I owe, in one way or another, the fact that it was, from beginning to end, one of the happiest experiences that I have ever had.

(*Continued from page 375*)

11. *Psychological Research on Flexible Gunnery Training*, R. N. Hobbs
12. *Psychological Research on Radar Observer Training*, Stuart W. Cook
13. *Psychological Research on Flight Engineer Training*, John T. Dailey
14. *Psychological Research on Problems of Redistribution*, Frederic Wickert
15. *The Psychological Program in AAF Convalescent Hospitals*, Sidney W. Bijou
16. *Psychological Research on Operational Training in the Continental Air Forces*, Meredith P. Crawford, Richard T. Sollenberger, Lewis B. Ward, Clarence W. Brown, Edwin E. Ghiselli
17. *Psychological Research in the Theaters of War*, William M. Lepley
18. *Records, Analysis and Test Procedures*, Walter L. Deemer
19. *Psychological Research on Equipment Design*, Paul M. Fitts

These reports have been published by the Government Printing Office and are available from the Superintendent of Documents, Washington 25, D. C.

RESEARCH REPORTS OF THE AAF AVIATION PSYCHOLOGY PROGRAM

JOHN C. FLANAGAN

University of Pittsburgh

THE Aviation Psychology Program of the Army Air Forces has prepared a series of 19 reports on the research done during the war. The general objective of this series of reports is to present the complete story of procedures developed, predictive tests and evaluative techniques produced, and facts and relationships established. It is intended that through these reports a comprehensive statement of the findings and results will be made available for planning future research and operating procedures in the Air Forces.

In order that these reports accomplish this objective as effectively as possible, general plans for the preparation of the reports were developed in a series of three conferences attended by most of those individuals having editorial responsibility for each of the various reports. The first discussion of the reports took place at a conference in San Francisco early in August 1944. A memorandum sent out in October 1944 requested that preliminary outlines be submitted. At a conference at Lincoln Army Air Field in May 1945 tentative target dates were set for the completion of the various reports. On the 3rd and 4th of August 1945 a special conference was held at Randolph Field for the purpose of developing final plans for the reports. At this conference each of the editors presented the detailed outline for his report. General matters of policy and various problems concerning the tentative style manual prepared by Hq. AAF Training Command were discussed and agreed upon. The revised manual was reproduced and distributed as the "Style Book for Preparing Reports on the Aviation Psychology Program" by the Psychological Section, Hq. AAF Training Command.

The editors were requested to submit copies of their manuscripts to Hq. Army Air Forces, Hq. AAF Training Command, and to other interested units. The Psychological Branch in Hq. Army Air Forces examined all manuscripts with regard to considerations of policy, technical procedures, conflicts, and general contents. The officer in charge of psychological publications in Hq. AAF Training Command examined the manuscripts primarily for style, organization, and expression. Other units examined specific portions of the manuscript primarily with regard to overlap and special knowledge concerning discussions of work for which these other units had been primarily responsible.

Although numerous suggestions for changes were made, the final responsibility for the content of the reports was in all cases that of the editor of the specific report. In only a few instances was it possible to discuss suggestions in person and in very few instances were revisions seen prior to the preparation of the mimeographed preliminary drafts.

The titles of the reports and the names of the officers in the Aviation Psychology Program primarily responsible for supervising their preparation and editing are listed below:

1. *The Aviation Psychology Program in the Army Air Forces*, John C. Flanagan
2. *The Classification Program*, Philip H. DuBois
3. *Research Problems and Techniques*, Robert L. Thorndike
4. *Apparatus Tests*, Arthur W. Melton
5. *Printed Classification Tests, Parts I and II*, J. P. Guilford, assisted by John I. Lacey
6. *The AAF Qualifying Examination*, Frederick B. Davis
7. *Motion Picture Testing and Research*, James J. Gibson
8. *Psychological Research on Pilot Training*, Neal E. Miller
9. *Psychological Research on Bombardier Training*, Edward H. Kemp and Albert P. Johnson
10. *Psychological Research on Navigator Training*, Launor F. Carter

(*Continued on page 374*)

A BIBLIOGRAPHY ON CAREERS IN PSYCHOLOGY

GEORGE J. DUDYCHA

Ripon College

PSYCHOLOGY has long appealed to students and to laymen. Today this interest is even greater than before, and, occupationally speaking, the future of psychology is very promising. An increasing number of people are seeking the services of psychologists. Public and special schools, various types of institutions, hospitals, clinics, welfare agencies, business organizations, industries, the armed services, government departments and agencies are demanding more psychologists each year. More college and university students are studying psychology today than ever before, and many of them are asking: What must one do to become a psychologist? Psychologists are themselves becoming alert to the occupational needs and possibilities of their science. Journal articles dealing with opportunities, training requirements, and certification of psychologists have come as a flood during and since World War II. At its last annual meeting, the American Psychological Association decided to publish a brochure presenting the occupational opportunities in the various fields of psychology.

Since at the present time there is no bibliography that summarizes adequately the occupational aspects of the various fields of psychology, it is my purpose to present here a selected bibliography of recent literature on the topic.

The references included were selected from among several hundred that are occupational in nature or that are occupationally significant. Practically all of the references included were published since 1940. Only 21 of the 157 references were published before that date, and some of these were included for historical reasons. More than three-fourths of the titles appeared during the last five years, and nearly one-fifth of them during 1946. Psychology teachers and counselors may be interested in knowing that half of the journal articles included here are found in the *Journal of Consulting Psychology*. Volumes 6 through 10 of that journal are of particular value to the student. The *Psychological Bulletin* and the *Journal of Applied Psychology* have from time to time included occupationally significant articles, but not in any large number. The editorial policy of THE AMERICAN PSYCHOLOGIST stresses the occupational and professional aspects of psychology. Eleven articles published in this journal during 1946 are included here.

PUBLICATIONS OF GENERAL INTEREST

Most of the publications dealing with the general occupational and professional opportunities in psychology are brief. The National Roster of Scientific and Specialized Personnel published two leaflets (*4, 5*) that give general information. A very adequate discussion of six fields of applied psychology is found in Berdie (*18*). An earlier report on psychology as a career was written by Hildreth (*63*). Two committee reports prepared by Boring and others (*20, 21*) present recommendations for future development and proposals for training. These are of less interest to the student than to the professional psychologist.

Shartle (*132*) presents descriptions of 28 psychological occupations giving the duties, the qualifications required, and the approximate salary and prospects for advancement. These descriptions are classifications of positions and are intended as a guide for those who want to know the general duties in occupational areas in which psychologists are employed. Dudycha (*46*) gives a brief description of the overall picture in 1946.

Several articles give information concerning employment trends in psychology. The oldest of these by Kitson (*78*) presents data on the increase in the number of psychologists up to 1933. Finch and Odoroff (*52, 53*) indicate the trends in the employment of applied psychologists between 1916 and 1940. Marquis (*92*) tells how 4,553 psychologists were employed at the beginning of 1944 and the changes since 1941. In a second article, Marquis (*93*) indicates the employment trends from 1931 to

1945 and also gives us his prediction as to post-war opportunities.

Women are playing an increasingly important role in American psychology. Fernberger (*50*) presented the opportunities open to women in college and university teaching. Murphy (*103*) introduced a series of six articles in the *Journal of Consulting Psychology* that discusses the war activities of women psychologists. Bryan and Boring (*24*) presented data on the ratio of women to men in psychology. The same authors (*25*) published data on the employment of women psychologists in 1940 and 1944, giving their degrees and salaries received. In a recent article Bryan and Boring discuss factors affecting the careers of women psychologists (*26*). Armstrong (*11*) tells about the activities and development of the National Council of Women Psychologists.

The Teaching of Psychology

Although more psychologists are employed as college and university teachers than in any other phase of psychology, little has been published concerning their work, status, and opportunities for advancement. Prior to the war, Fernberger (*50*) discussed the status of women in teaching, and Berdie (*18*) touched on it briefly.

The Psychological Counselor

The psychological counselor may be employed in any one of several ways. He may counsel children, young adults, married people, or the aged. He may be employed by a school system, a public or a private institution, a guidance center, a hospital, or a prison. Each type of employment has advantages that appeal to particular psychologists.

The School Psychologist. Two excellent general accounts that tell about the duties, training, and employment opportunities of school psychologists were prepared by Goldberg (*58*) and by Cornell (*32*). Symonds' (*138*) article on the school psychologist in 1942 introduced a series of nine articles in a single issue of the *Journal of Consulting Psychology*. Briefer accounts may also be found in Berdie (*18*). The work of the school psychologist in public education is discussed by Baker (*12*), Cornell (*33*), Fenton (*49*), and Krugman (*80*). His work in the private school is presented by Thayer (*143*). Rosebrook (*116*) discusses the possibilities for employment in smaller communities on a regional basis. Zehrer (*157*) stresses the mental hygiene aspect of the school psychologist's work. The certification of school psychologists is discussed by Cornell (*31*) and Cutts (*38*).

Child Guidance. Very few specific references are available in this field. Carter (*30*) presents an excellent discussion of the work of the Wichita Guidance Center; Witmer (*153*) gives an extended account on psychiatric clinics for children.

The Marriage and Family Counselor. There is both an increased need for and interest in this type of counseling. The functions of the marriage counselor are discussed by Cuber (*37*) and by Bennett (*16*). Other references are Benz (*17*), and McClure (*98*).

Counseling the Aged. This type of counseling is still in its infancy. The need for it is discussed by Ruess (*119*). A handbook prepared for old-age counselors was written by Martin (*97*). Lawton (*83, 84*) discusses this field of psychological work.

Guidance and Counseling. Hoslett (*66*) in 1944 stressed the need for better industrial and student counseling. An excellent job description is found in an article by Shartle (*131*) and information concerning the characteristics, training requirements, and certification of counselors is given by Jones (*70*). The counselor's day is described by Laubenstein (*82*); the work of school counselors is given by Wright (*156*), and Retlig (*113*) discusses the counseling of women factory workers. The role of the vocational counselor is discussed by Goldman (*59*), and his role in a prison system is given by Martin (*96*). The training of vocational counselors is discussed in a bulletin published by the War Manpower Commission (*150*). General information concerning the training of counselors is found in an article by Super (*137*) and in an anonymous (*1*) article.

Rehabilitation Work. Several recent publications give a general view of rehabilitation work. Among these are an anonymous (*6*) article, one by Beard (*14*) and others by Dabelstein (*39*), and Elliott (*47*). The role of the psychologist in rehabilitation is discussed by DiMichael (*43*) and by Marquis and others (*94*). A list of government agencies engaged in vocational rehabilitation is found in Marquis (*91*). Counseling and personality testing is discussed by Lipkin (*87*). Gillman and Ramsey (*57*)

stress the rehabilitation of personnel in the Army Air Forces. The qualifications for rehabilitation counselors are listed by Finch (*51*).

The Prison Psychologist. Two recent articles should be read by those interested in prison work. Corsini (*34*) delineates the work of the prison psychologist, the special training required, and the probable future open to him. Martin (*96*) gives a picture of vocational guidance in a prison system.

CLINICAL PSYCHOLOGY

Clinical Psychology. An excellent general discussion of clinical psychology was published several years ago by Louttit (*89*). A general discussion of this field may be found in Berdie (*18*). The clinical psychologist's work with alcoholics is discussed by Trowbridge (*145*), his work in a psychiatric clinic by Pierce (*109*), in a state hospital by Shakow (*127*), in the Veterans Administration by Miller (*100*), and in the general hospitals of the army by Layman (*86*).

A number of articles have dealt with the training of clinical psychologists. A brief article on trends in training was prepared by Shakow (*129*). Several articles deal with the undergraduate and graduate courses required and recommended. Among these are articles by Sears (*121*), Rosenzweig, Root, and Pearson (*117*), Moore and others (*101*), Shakow (*128*), and Greene (*60*). The most recently published are listed first. Additional articles dealing with training are those by Symonds (*139*), Rogers (*114*), Doll (*44*), and Poffenberger (*110*). The certification of clinical psychologists is discussed by Selling (*124*) and by Shaffer and others (*125*).

The Institutional Psychologist. The work of the clinical psychologist in various types of hospitals was discussed in a series of articles published in 1944 and introduced by Wells (*152*). Work in a psychiatric unit for children was presented by Kinder (*74*). Rapaport (*111*) discussed the work in a private mental hospital; Schott (*120*) in a general hospital; Seidenfeld (*123*) in a tuberculosis hospital; Stevens (*136*) in a station hospital; Tallman (*141*) in a neurological hospital; Wechsler (*151*) in a psychiatric hospital, and Wittman (*154*) in a state hospital for the mentally ill. A general account may be found in Berdie (*18*).

Psychometrist. The psychometrist is to the clinical psychologist what the laboratory technician is to the physician. Berdie (*18*) discusses this work briefly. Barten (*13*) discusses the psychometric methods used in a mental hygiene clinic in a psychopathic hospital.

Public Health. Derryberry (*42*) presents a very adequate discussion of psychological work in public health.

PSYCHOLOGICAL WORK AMONG EXCEPTIONAL CHILDREN

Delinquents. A rather extended committee report on the psychological work in institutions for delinquent boys and girls was prepared by Giardini and others (*56*). Comments on this report were made by Rogers, Symonds and Shakow (*115*). Martens (*95*) presents data on training opportunities in this field.

Feebleminded and Gifted. Laycock (*85*) discusses the mental health qualifications required of special class teachers, and Burnside (*28*) discusses the psychological guidance of gifted children. Training opportunities are discussed by Martens (*95*).

Blind and Deaf Children. Haven (*61*) discusses the training of teachers of the blind, and Lowenfeld (*90*) their status and salaries. Myklebust (*104*) outlines the functions of a psychologist in a residential school for the deaf. Vocational guidance in schools for the deaf is discussed by Crammatte (*35*, *36*). A bulletin by Martens (*95*) presents training opportunities.

Speech Correction. The constitution and by-laws of the American Speech Correction Association, presented in an anonymous (*3*) article, give the reader some information concerning this field of work. The membership regulations and training requirements of the ASCA are presented by Palmer (*107*). Schools that specialize in this type of training are listed by Martens (*95*).

Remedial Reading. Hildreth (*64*) discusses this type of work as a specialty for psychologists.

BUSINESS AND INDUSTRY

Personnel. An excellent monograph by Darley and Berdie (*40*) discusses at some length the various features of personnel work. An account of the development of personnel research in industry is found in Kirkpatrick (*77*). Information concerning public personnel work may be found in Stead (*135*). Discussions of employee counseling are found in

Newman (*105*), Retlig (*113*), Tead (*142*), and in an anonymous government bulletin (*10*). Articles dealing with the training of personnel workers were published by Jones (*69*) and by Kitson (*79*).

Business and Industry. Uhrbrock (*147, 148, 149*) has written a series of articles on the opportunities in and training for industrial psychology. The reader will find the third one of these particularly instructive. A recent article by Taft (*140*) describes the psychologist's work in industry. What psychologists can do in business is told by Starch (*134*). Berdie (*18*) also discusses the work. Advertising as an occupation is very adequately presented by Davis (*41*).

Public Opinion and Market Research. Trends in marketing research were discussed in an article by Burtt (*29*). This article is an introduction to seven additional articles that deal with various problems of market research. The nature of the work, training for, and other features of the measurement of public opinion are given by Katz (*71*). Attitude research in the Department of Agriculture is discussed by Skott (*133*).

Radio and Plant Broadcasting. The duties of the child psychologist in radio broadcasting are presented by Jersild (*68*). Plant broadcasting is discussed by Kerr (*72, 73*) and by Kirkpatrick(*76*).

Psychologists in Government Service

Civilian Psychologists. A very informative article on psychological work in civil service was prepared by O'Rourke (*106*). This article discusses examinations, grades, and salaries paid. Britt (*22*) lists the offices, divisions and departments that employ psychologists. Marquis (*91*) discusses the work of government agencies engaged in vocational rehabilitation, and Tolman and Lickert (*144*) present the services of psychologists in the field of agriculture.

Military Psychologists. A very adequate description of the distribution of military psychologists during the war, and the nature and extent of their training, is given by Marquis (*92*). Work in one phase of the army is presented by Lipkin (*87*) and in an anonymous article (*9*). Some of the work in the navy is presented by Pennington (*108*) and in an anonymous article (*8*). Service in the air forces is discussed in an anonymous article (*7*) and by Gillman and Ramsey (*57*). During the war years a large number of articles dealing with psychological work in the various branches of the service were published in the *Psychological Bulletin* and in the *Journal of Consulting Psychology*. The interested reader can locate these easily.

Psychological Work with Limited Opportunities

The applications of psychology to traffic engineering are presented by Forbes (*54*). The work of the psychologist in the school of music is discussed by Seashore (*122*), in the library school by Bryan (*23*), and in the museum by Lark-Horovitz and Keith (*81*). Although the employment opportunities in these fields of psychological work are still limited, they do hold promise for future development.

Internship Training

Under the foregoing headings specific attention was called to publications that stress the training requirements for the various fields of psychology. In recent years increasing stress has been placed on the importance of on-the-job training. This is particularly true in clinical psychology. The following group of recently published articles dealing with internships and externships in psychology should be read by the reader interested in clinical psychology. Doll (*45*) discusses the internship program at the Vineland Training School for feebleminded children. Bixler, Bordin, and Deabler (*19*) present the opportunities in college counseling at the University of Minnesota. Elonen, Onken and Slight (*48*) discuss psychological externships in medical school clinics. Rapaport and Schafer (*112*) give the training opportunities at the Menninger Clinic. Graduate internships at the Western State Psychiatric Institute and Clinic are discussed by Rosenzweig (*118*), and the Worcester internship program is presented by Shakow (*130*). Beck (*15*) discusses the psychological externships at the Michael Reese Hospital in Chicago, and Wittman (*155*) presents the state-wide opportunities in clinical psychology in Illinois. Internship opportunities in New York State are discussed by Kinder (*75*), and in New York City by Tulchin (*146*). Morrow (*102*) published a very adequate history of internship training which includes a bibliography

of 99 titles. A valuable general account of internship training is found in an anonymous article (*2*). A somewhat older publication on this subject that has value is one by Shakow (*126*).

THE CERTIFICATION OF PSYCHOLOGISTS

In the past several years notable strides have been taken in the direction of the certification of psychologists. It is particularly significant that at the 1946 meeting of the American Psychological Association the committee report prepared by Jacobsen and others (*67*) proposing an American Board of Examiners in Professional Psychology was adopted. This action sets up a separate board that will certify psychologists in clinical and industrial psychology, in guidance and in such other professional fields of work as shall be added in the future. Other recent committee reports well worth noting are Long (*88*), and Shaffer and others (*125*). The certification of school psychologists is discussed by Cornell (*31*), by Cutts (*38*), and by Horrocks (*65*). Certification laws applying to psychologists have been passed in a number of states. Buck and others (*27*) discuss the certification of clinical psychologists in Virginia; Fowerbaugh (*55*) presents the legal status of psychologists in Ohio, and Heiser (*62*) discusses the certification of psychologists in Connecticut. Both Jones (*70*) and MacKay (*99*) discuss the certification of counselors. Selling (*124*) devotes some space to certification.

REFERENCES

1. Anonymous A graduate program for preparing specialists in occupational information and guidance. *J. Higher Educ.*, 1945, **1**, 3–7.
2. Anonymous Graduate internship training in psychology. *J. consult. Psychol.*, 1945, **9**, 243–266.
3. Anonymous Constitution and By-Laws of the American Speech Correction Association. *J. Speech Disorders*, 1943, **8**, 53–61.
4. Anonymous *The job of the psychologist.* Occupational Brief Number 42. National Roster of Scientific and Specialized Personnel, 1945.
5. Anonymous *Psychology.* National Roster of Scientific and Specialized Personnel.
6. Anonymous Jobs for psychologists in vocational rehabilitation. *Occupations*, 1944, **22**, 325–326.
7. Anonymous Psychological activities in the Training Command, Army Air Forces. *Psychol. Bull.*, 1945, **42**, 37–54.
8. Anonymous Psychological testing and research in the Bureau of Naval Personnel: Work of the Navy's Test and Research Station. *Psychol. Bull.*, 1945, **42**, 433–444.
9. Anonymous Personnel Research Section, the Adjutant General's Office: Development and current status. *Psychol. Bull.*, 1945, **42**, 445–452.
10. Anonymous *Women in personnel and inaustrial relations work in war industries.* Washington, D.C.: Department of Labor, Women's Bureau, 1943.
11. ARMSTRONG, C. P. The National Council of Women Psychologists. In Harriman, P. L. (Ed.): *Encycl. of Psychol.*, New York, Philosophical Library, 1946, pp. 402–403.
12. BAKER, G. D. What the public school needs from the psychologist. *J. consult. Psychol.*, 1942, **6**, 177–180.
13. BARTEN, M. B. Psychometric methods in a mental hygiene clinic of a psychopathic hospital. *J. consult. Psychol.*, 1944, **8**, 286–290.
14. BEARD, S. A. *Vocational Rehabilitation.* New York: Occupational Index Inc., 1944.
15. BECK, S. J. Psychological externships at the Michael Reese Hospital. *J. consult. Psychol*, 1946, **10**, 209–215.
16. BENNETT, M. W. The psychologist in family consultation service. *J. consult. Psychol.*, 1942, **6**, 85–88.
17. BENZ, M. G. *Family counseling services in a university community.* New York: Bureau of Publications, Teachers College, Columbia University, 1941.
18. BERDIE, R. The field of applied psychology. *J. appl. Psychol.*, 1940, **24**, 553–575.
19. BIXLER, R. H., BORDIN, E. S. AND DEABLER, H. L. Supervised training in a college counseling bureau. *J. consult. Psychol.*, 1946, **10**, 233–236.
20. BORING, E. G., *et al.* First report of the Subcommittee on Survey and Planning for Psychology. *Psychol. Bull.*, 1942, **39**, 619–630.
21. BORING, E. G., *et al.* Psychology as science and profession. *Psychol. Bull.*, 1942, **39**, 761–772.
22. BRITT, S. H. (Ed.) Employment of psychologists in the federal government. *Psychol. Bull.*, 1942, **39**, 255–257.
23. BRYAN, A. I. Psychological service in the library field. *J. consult. Psychol.*, 1942, **6**, 73–77.
24. BRYAN, A. I. AND BORING, E. G. Women in American psychology: Prolegomenon. *Psychol. Bull.*, 1944, **41**, 447–454.
25. BRYAN, A. I. AND BORING, E. G. Women in American psychology: Statistics from the OPP questionnaire. *Amer. Psychologist*, 1946, **1**, 71–79.
26. BRYAN, A. I. AND BORING, E. G. Women in American psychology: Factors affecting their professional careers. *Amer. Psychologist*, 1947, **2**, 3–20.
27. BUCK, J. N., FINLEY, C. B., SPEIT, D. K., RYMARKIEWICZOWA, D. AND FINGER, F. W. The certification of clinical psychologists in Virginia. *Amer. Psychologist*, 1946, **1**, 395–398.
28. BURNSIDE, L. H. Psychological guidance of gifted children. *J. consult. Psychol.*, 1942, **6**, 223–228.
29. BURTT, H. E. Current trends in marketing research. *J. consult. Psychol.*, 1941, **5**, 145–148.

30. Carter, J. W. The Wichita Guidance Center. *J. consult. Psychol.*, 1944, **8**, 27–30.
31. Cornell, E. L. Certification of specialized groups of psychologists. *J. consult. Psychol.*, 1941, **5**, 62–65.
32. Cornell, E. L. *The work of the school psychologist.* Albany: University of the State of New York, Bulletin Number 1238, 1942.
33. Cornell, E. L. The psychologist in a school system. *J. consult. Psychol.*, 1942, **6**, 185–195.
34. Corsini, R. Functions of the prison psychologist. *J. consult. Psychol.*, 1945, **9**, 101–104.
35. Crammatte, A. B. Vocational guidance in schools for the deaf. *Amer. Ann. Deaf*, 1939, **84**, 392–404.
36. Crammatte, A. B. Vocational guidance in schools for the deaf. *Amer. Ann. Deaf*, 1940, **85**, 381–390.
37. Cuber, J. F. Functions of the marriage counselor. *Marriage and Family Living*, 1945, **7**, 3–5.
38. Cutts, N. E. Development of a certification procedure for school psychologists. *J. consult. Psychol.*, 1943, **7**, 45–49.
39. Dabelstein, D. H. Counseling in the rehabilitation service. *J. clin. Psychol.*, 1946, **2**, 116–122.
40. Darley, J. G. and Berdie, R. F. *The fields of personnel work.* Chicago: Science Research Associates, Monograph Number 20, 1943.
41. Davis, E. W. *Advertising as an occupation.* Chicago: Science Research Associates, Monograph Number 9, 1939.
42. Derryberry, M. Psychological work in public health. *J. consult. Psychol.*, 1942, **6**, 78–82.
43. DiMichael, S. G. and Dabelstein, D. H. The psychologist in vocational rehabilitation. *J. consult. Psychol.*, 1946, **10**, 237–245.
44. Doll, E. A. Preparation for clinical psychology. *J. consult. Psychol.*, 1939, **3**, 137–140.
45. Doll, E. A. Internship program at the Vineland Laboratory. *J. consult. Psychol.*, 1946, **10**, 184–190.
46. Dudycha, G. J. New paths for the psychologist. *Sch. and Coll. Placement*, 1946, **7**, (2), 11–17.
47. Elliott, R. M. Occupational and vocational rehabilitation. *Psychol. Bull.*, 1944, **41**, 47–56.
48. Elonen, A. S., Onken, M. A. and Slight, D. Training the clinical psychologist: Externships in medical school clinics. *Amer. Psychologist*, 1946, **1**, 50–54.
49. Fenton, N. *Mental hygiene in school practice.* Stanford University: Stanford University Press, 1943, pp. 59–70.
50. Fernberger, S. W. Academic psychology as a career for women. *Psychol. Bull.*, 1939, **36**, 390–394.
51. Finch, F. H. Qualifications for rehabilitation counselors. *Occupations*, 1937, **15**, 628–630.
52. Finch, F. H. and Odoroff, M. E. Employment trends in applied psychology. *J. consult. Psychol.*, 1939, **3**, 118–122.
53. Finch, F. H. and Odoroff, M. E. Employment trends in applied psychology, II. *J. consult. Psychol.*, 1941, **5**, 275–278.
54. Forbes, T. W. Psychological applications to the new field of traffic engineering. *J. appl. Psychol.*, 1941 **25**, 52–58.
55. Fowerbaugh, C. C. Legal status of psychologists in Ohio. *J. consult. Psychol.*, 1945, **9**, 196–200.
56. Giardini, G. I., *et al.* Report of the Committee on Psychological Work in Institutions for Delinquent Boys and Girls. *J. consult. Psychol.*, 1942, **6**, 157–162.
57. Gillman, R. D. and Ramsey, G. V. AAF convalescent-rehabilitation program. *Psychol. Bull.*, 1944, **41**, 548–550.
58. Goldberg, S., *et al.* Report on the functions, training, and employment opportunities of school psychologists. *J. consult. Psychol.*, 1943, **7**, 230–243.
59. Goldman, R. The role of a psychologist in a vocational counseling service. *Occupations*, 1946, **24**, 501–505.
60. Greene, E. B. What courses are essential for work in psychological diagnosis and treatment. *J. consult. Psychol.*, 1938, **2**, 43–45.
61. Haven, G. M. Training teachers of the blind. *Outlook for the Blind*, 1940, **34**, 174–177.
62. Heiser, K. F. Certification of psychologists in Connecticut. *Psychol. Bull.*, 1945, **42**, 624–630.
63. Hildreth, G. Psychology as a career. *J. consult. Psychol.*, 1937, **1**, 25–28.
64. Hildreth, G. The psychologist investigates reading disability. *J. consult. Psychol.*, 1942, **6**, 212–217.
65. Horrocks, J. E. State certification requirements for school psychologists. *Amer. Psychologist*, 1946, **1**, 399–401.
66. Hoslett, S. Wanted better industrial and student counseling. *Occupations*, 1944, **23**, 32–34.
67. Jacobsen, C. F., *et al.* Report of the Committee on the American Board of Examiners in Professional Psychology. *Amer. Psychologist*, 1946, **1**, 510–517.
68. Jersild, A. T. A child psychologist in radio. *J. consult. Psychol.*, 1942, **6**, 69–73.
69. Jones, A. J. Preparation for personnel workers. *Rev. Educ. Res.*, 1945, **15**, 185–190.
70. Jones, A. J. *Principles of guidance.* New York: McGraw-Hill, 1945, Chapter 26.
71. Katz, D. Psychological tasks in the measurement of public opinion. *J. consult. Psychol.*, 1942, **6**, 59–65.
72. Kerr, W. A. Psychological background of industrial broadcasting. *Psychol. Bull.*, 1943, **40**, 341–349.
73. Kerr, W. A. Psychological research in industrial music and plant broadcasting. *J. Psychol.*, 1944, **17**, 243–261.
74. Kinder, E. F. Work of the psychologist in a psychiatric unit for children. *J. consult. Psychol.*, 1944, **8**, 273–280.
75. Kinder, E. F. The New York State psychological intern training program, development of a "rotating" internship in psychology. *J. consult. Psychol.*, 1946, **10**, 201–208.
76. Kirkpatrick, F. H. Music in industry. *J. appl. Psychol.*, 1943, **27**, 268–274.
77. Kirkpatrick, F. H. The development of personnel research in industry. *Occupations*, 1944, **22**, 302–034.

78. KITSON, H. D. A further study of the turnover of psychologists. *J. appl. psychol.*, 1933, **17**, 542–549.
79. KITSON, H. D. Training for personnel work. *Person. J.*, 1937, **15**, 260–263.
80. KRUGMAN, M. The psychologist's role in pupil classification. *J. consult. Psychol.*, 1942, **6**, 205–211.
81. LARK-HOROVITZ, B. AND KEITH, F. H. The role of the psychologist in the art museum. *J. consult. Psychol.*, 1942, **6**, 82–84.
82. LAUBENSTEIN, O. H. Round the clock with a counselor. *Occupations*, 1944, **22**, 362–364.
83. LAWTON, G. Opportunities for psychologists in work with the aged. *J. consult. Psychol.*, 1942, **6**, 89–91.
84. LAWTON, G. Psychological guidance for old people. In Cowdry, E. V. (Ed.): *Problems of ageing*. Baltimore: Williams & Wilkins Co., 1942, Second Edition Revised.
85. LAYCOCK, S. R. Mental health qualifications for special class teachers. *J. except. Child.*, 1940, **7**, 4–8.
86. LAYMAN, J. W. Utilization of clinical psychologists in the general hospitals of the Army. *Psychol. Bull.*, 1943, **40**, 212–216.
87. LIPKIN, S. The personnel consultant in an Army rehabilitation center. *Psychol. Bull.*, 1944, **41**, 524–531.
88. LONG, L. Professional status and training of psychologists, report on annual meeting of NYSAAP. *J. consult. Psychol.*, 1946, **10**, 104–108.
89. LOUTTIT, C. M. The nature of clinical psychology. *Psychol. Bull.*, 1939, **36**, 361–389.
90. LOWENFELD, B. *Teachers of the blind: Their status and salaries*. New York: American Foundation for the Blind, 1941.
91. MARQUIS, D. G. Agencies for rehabilitation and vocational readjustment. *Psychol. Bull.*, 1943, **40**, 687–691.
92. MARQUIS, D. G. The mobilization of psychologists for war service. *Psychol. Bull.*, 1944, **41**, 469–473.
93. MARQUIS, D. G. Post-war reemployment prospects in psychology. *Psychol. Bull.*, 1944, **41**, 653–663.
94. MARQUIS, D. P., NOVIS, F. W. AND WESLEY, S. M. The role of psychology in a rehabilitation program. *Psychol. Bull.*, 1943, **40**, 692–700.
95. MARTENS, E. H. *Opportunities for the preparation of teachers of exceptional children*. Washington, D. C.: Office of Education, 1938.
96. MARTIN, H. G. Vocational guidance in a prison system. *Amer. Psychologist*, 1946, **1**, 542–543.
97. MARTIN, L. J. *A handbook for old age counselors*. San Francisco: Geertz Printing Company, 1944.
98. MCCLURE, D. Intake in a family guidance center. *Family*, 1940, **21**, 247–253.
99. MACKAY, J. L. Certification of high school counselors. *Occupations*, 1946, **24**, 392–394.
100. MILLER, J. G. Clinical psychology in the Veterans Administration. *Amer. Psychologist*, 1946, **1**, 181–189.
101. MOORE, B. V., *et al.* Proposed program of professional training in clinical psychology. *J. consult. Psychol.*, 1943, **7**, 23–26.
102. MORROW, W. R. The development of psychological internship training. *J. consult. Psychol.*, 1946, **10**, 165–183.
103. MURPHY, G. Service of women psychologists to the War: Forward. *J. consult. Psychol.*, 1943, **7**, 249–251.
104. MYKLEBUST, H. R. Functions of a psychologist in a residential school for the deaf. *J. consult. Psychol.*, 1945, **9**, 236–237.
105. NEWMAN, D. K. *The woman counselor in war industries: An effective system*. Washington, D. C.: Department of Labor, Women's Bureau, 1944.
106. O'ROURKE, L. J. Standards for psychologists in Civil Service. *J. consult. Psychol.*, 1941, **5**, 59–61.
107. PALMER, M. F. American Speech Correction Association membership regulations. *J. Speech Disorders*, 1943, **8**, 41–51.
108. PENNINGTON, L. A. The psychologist's duties in the Naval disciplinary barracks. *J. consult. Psychol.*, 1945, **9**, 186–190.
109. PIERCE, H. O. The function of a psychologist in a psychiatric clinic. *Ment. Hyg.*, N. Y., 1946, **30**, 257–276.
110. POFFENBERGER, A. T. The training of a clinical psychologist. *J. consult. Psychol.*, 1938, **2**, 1–6.
111. RAPAPORT, D. The psychologist in the private mental hospital. *J. consult. Psychol.*, 1944, **8**, 298–301.
112. RAPAPORT, D. AND SCHAFER, R. The psychological internship training program of the Menninger Clinic. *J. consult. Psychol.*, 1946, **10**, 216–220.
113. RETLIG, M. Counseling women factory workers. *Occupations*, 1944, **23**, 22–25.
114. ROGERS, C. R. Needed emphases in the training of clinical psychologists. *J. consult. Psychol.*, 1939, **3**, 141–143.
115. ROGERS, C. R., SYMONDS, P. M. AND SHAKOW, D. Comments on the report of the Committee on Psychological Work in Institutions for Deliquent Boys and Girls. *J. consult. Psychol.*, 1942, **6**, 163–164.
116. ROSEBROOK, W. M. Psychological services for schools on a regional basis. *J. consult. Psychol.*, 1942, **6**, 196–200.
117. ROSENZWEIG, S., ROOT, W. T. AND PEARSON, G. B. Education for clinical psychology program of training at the Western State Psychiatric Hospital in affiliation with the University of Pittsburgh. *J. consult. Psychol.*, 1944, **8**, 354–359.
118. ROSENZWEIG, S. Graduate internships in psychology at the Western State Psychiatric Institute and Clinic. *J. consult. Psychol.*, 1946, **10**, 225–227.
119. RUESS, C. Centers needed for senior citizens. *Fam. Life Educ.*, February, 1945.
120. SCHOTT, E. L. The psychologist in the general hospital. *J. consult. Psychol.*, 1944, **8**, 302–307.
121. SEARS, R. R. Graduate training facilities: I. general information; II clinical psychology. *Amer. Psychologist*, 1946, **1**, 135–150.
122. SEASHORE, H. G. The psychologist in a school of music. *J. consult. Psychol.*, 1939, **3**, 24–29.

123. SEIDENFELD, M. A. The psychologist in the tuberculosis hospital. *J. consult. Psychol.*, 1944, **8**, 312–318.
124. SELLING, L. S. Standards of training and experience in terms of job specifications as a basis for certification. *J. consult. Psychol.*, 1941, **5**, 66–69.
125. SHAFFER, L. F., *et al.* Report of the Committee on Clinical Psychology. *Amer. Psychologist*, 1946, **1**, 520–522.
126. SHAKOW, D. An internship year for psychologists. *J. consult. Psychol.*, 1938, **2**, 73–76.
127. SHAKOW, D. The functions of the psychologist in the state hospital. *J. consult. Psychol.*, 1939, **3**, 20–23.
128. SHAKOW, D. The training of the clinical psychologist. *J. consult. Psychol.*, 1942, **6**, 277–288.
129. SHAKOW, D. Training in clinical psychology—a note on trends. *J. consult. Psychol.*, 1945, **9**, 240–242.
130. SHAKOW, D. The Worcester internship program. *J. consult. Psychol.*, 1946, **10**, 191–200.
131. SHARTLE, C. L., *et al.* Vocational counselors. *J. appl. Psychol.*, 1944, **28**, 347–350.
132. SHARTLE, C. L. Occupations in psychology. *Amer. Psychologist*, 1946, **1**, 559–582.
133. SKOTT, H. E. Attitude research in the Department of Agriculture. *Publ. Opin. Quart.*, 1943, **7**, 280–292.
134. STARCH, D. What psychologists can do in business. *J. consult. Psychol.*, 1942, **6**, 92–94.
135. STEAD, W. H. Public personnel work. *Voc. Trends*, 1939, **2**, 14–16.
136. STEVENS, P. The station hospital psychologist. *J. consult. Psychol.*, 1944, **8**, 319–322.
137. SUPER, D. E. The basic course in the training of counselors: Survey or foundation. *Occupations*, 1944, **22**, 345–347.
138. SYMONDS, P. M. The school psychologist—1942. *J. consult. Psychol.*, 1942, **6**, 173–176.
139. SYMONDS, P. M. A method of training clinical psychologists for child guidance. *J. consult. Psychol.*, 1943, **7**, 41–45.
140. TAFT, R. The staff psychologist in industry. *Amer. Psychologist*, 1946, **1**, 55–61.
141. TALLMAN, G. The psychologist in a neurological hospital. *J. consult. Psychol.*, 1944, **8**, 308–311.
142. TEAD, O. *Employee counseling: A new personnel assignment—Its status and its standards.* New York: Advanced Management, 1943.
143. THAYER, V. T. Psychological services needed in a private school. *J. consult. Psychol.*, 1942, **6**, 181–184.
144. TOLMAN, R. AND LICKERT, R. Psychologists' services in the field of agriculture. *J. consult. Psychol.*, 1942, **6**, 65–68.
145. TROWBRIDGE, L. S. The psychologist works with alcoholics. *J. consult. Psychol.*, 1945, **9**, 178–185.
146. TULCHIN, S. H. The clinical training of fellows-in-psychology. *J. consult. Psychol.*, 1946, **10**, 228–232.
147. UHRBROCK, R. S. Opportunities for industrial psychologists. *Occupations*, 1936, **15**, 266–268.
148. UHRBROCK, R. S. Qualifications of industrial psychologists. *Occupations*, 1937, **15**, 488–492.
149. UHRBROCK, R. S. Industrial psychology as a career. *J. soc. Psychol.*, 1938, **9**, 251–286.
150. War Manpower Commission. *The training of vocational counselors.* Washington, D. C.: Bureau of Training, War Manpower Commission, 1944.
151. WESCHLER, D. The psychologist in the psychiatric hospital. *J. consult. Psychol.*, 1944, **8**, 281–285.
152. WELLS, F. L. Psychologists' functions in hospitals, introductory note. *J. consult. Psychol.*, 1944, **8**, 267–272.
153. WITMER, H. L. *Psychiatric clinics for children.* New York: Commonwealth Fund, 1940.
154. WITTMAN, P. Psychological services in state hospitals for the mentally ill. *J. consult. Psychol.*, 1944, **8**, 291–297.
155. WITTMAN, P. A state-wide program for a practicum course in clinical psychology. *J. consult. Psychol.*, 1946, **10**, 221–224.
156. WRIGHT, B. H. Minneapolis school counselors analyze their jobs. *Occupations*, 1946, **24**, 214–219.
157. ZEHRER, F. A. The school psychologist as a mental hygiene specialist. *J. consult. Psychol.*, 1942, **6**, 218–222.

A LABORATORY PERIOD IN THE FIRST COURSE IN PSYCHOLOGY

HAROLD SCHLOSBERG[1]

Brown University

THE inclusion of a laboratory period in the first course in psychology is certainly not novel, for it has been the practice of a number of universities during the last two or three decades. On the other hand, the vast majority of institutions do not have such a laboratory period, perhaps because they fear that they would not be able to run a satisfactory program for large numbers of students, or because they think that it would not be worth the trouble. Since the war and the success achieved by the extensive laboratory work in the A.S.T.P. psychology program, a number of departments are reconsidering the question. Hence it seems worthwhile to pass along our experience.

When the Brown curriculum was revised in 1945, a one-semester course in General Psychology was included in the Distribution Requirements and will be taken by most A.B. candidates. Since the course was listed under the science group, and normally followed a similar course in Biology, we were requested to include a laboratory period. Our department believed that we should either have a laboratory that compares favorably with those in the other sciences or none at all. We anticipated approximately 400 students per semester. It seemed probable that we could handle 20 pairs, or 40 students, per period in a well-equipped laboratory. Since this would require 10 periods per week to handle all the students, the length of the period was set at 2 hours, permitting 2 periods per afternoon. It was also obvious that, if the scheme was to work at all, it would be necessary to have all students working on the same experiment during the same week. This called for 20 duplicate sets of apparatus (plus spares), with adequate storage facilities so that the units could be handled with a minimum of assembling and adjusting. It was estimated that the apparatus could be purchased and/or assembled for $5,000. Another $3,000 was set aside for furniture and apparatus cabinets. The cost of alteration and wiring of the laboratory room was not included in the estimates. In spite of increased costs we have stayed well within the estimates, and the laboratory is working smoothly, even though we started with 475 students instead of the expected 400. A laboratory fee of $3.50 per student covers costs of laboratory directions, supplies, replacements, and leaves enough surplus to amortize the original cost in about 10 years.

The Laboratory and Apparatus Rooms. A large lecture room, 33 ft. x 51 ft. with high ceilings, is equipped with 21 booths, each approximately 6 ft. x 6 ft., placed around the walls. This leaves sufficient space in the center of the room for 50 tablet arm chairs and a lecture desk. The booths are constructed of Masonite partitions, 8 ft. high, with a $2\frac{1}{2}$ ft. opening for a doorway. Each booth contains a table, 2 chairs, an adjustable stool, an electric wall clock, and a built-in hat shelf and coathanger. It also has an overhead light, a Duplex wall receptacle (A.C.) and 2 polarized receptacles. The polarized receptacles are arranged on 2 separate circuits that originate in male plugs in the Apparatus Room, making it possible to feed them with A.C. or D.C. of any desired voltage, either continuously, or in pulses for timing apparatus. All windows are equipped with shades and light traps.

The central portion of the room is furnished with ample blackboards. Several are detachable ones, ruled with white paint so that they can be used for tabulating and plotting data. Additional boards are obtained by painting some of the Masonite panels with blackboard paint. Other partitions carry bulletin boards. The front wall carries a large clock and 2 loudspeakers.

The Apparatus Room connects with the Laboratory Room, and is equipped with 23 running feet of built-in cabinets of the type used in modern

[1] The author served as "Executive Officer"; since practically every other member of the Staff of the Department of Psychology participated in the project, it is impractical to list them individually.

kitchens. In cross-section this shelving consists of a base unit for apparatus, a working surface, and an upper unit for storing laboratory directions, paper, and supplies. An additional cabinet is provided for single pieces of bulky apparatus such as the record player. The booth light and power receptacles are controlled from this room. One corner is fitted out with a desk and chairs, for use in conferences.

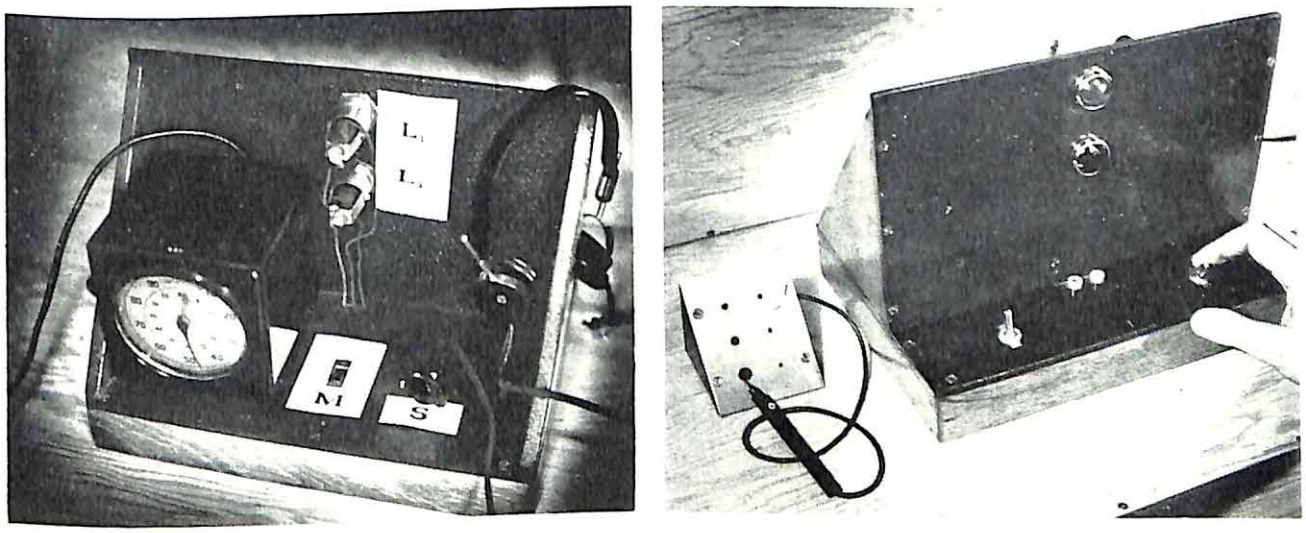
Experiments and Apparatus. The 13 experiments were planned to accompany and illustrate the lectures, which follow the order of Munn's *Psychology*, except that statistics and testing come at the start of the course. The laboratory directions are mimeographed at present. They are quite detailed, and contain spaces for data, tabulations, and answers to questions. These spaces are filled in during the laboratory period, so that the student can turn in his report as he leaves. It takes about 2 hours per week to grade 40 of these reports on a rough 4 point scale.

Many different factors entered into the choice of specific experiments, but throughout the planning we made an effort to build up a program which would introduce the students to the major research methods used in general psychology. To illustrate these aims, we will give a brief description of each of the weekly experiments.

1. *The Bennett Mechanical Comprehension Test.* This test was chosen to avoid the individual problems that would be aroused by an Intelligence Test. Form AA is administered, class results are collected, and the students are shown how to plot distributions and to compute simple measures of central tendency and dispersion.

2. *Form BB of the same test* is given, and the students compare scores with those obtained the previous week. They are then introduced to correlation, used to compute the reliability of the test. An automatic calculator is on order, and should facilitate computations in this and the next experiment.

3. *Steadiness, Strength of Grip, and Rate of Manipulation.* Students work in pairs in the booths. Steadiness is tested by a stainless steel plate with variable sized holes, using a radio type test lead as a stylus. The unit plugs into the timer (see Fig. 1, and Exp. 4) and reads total duration of contacts on a .01 secs. clock. Each student also



A B

Fig. 1. The Reaction Timer

A. Viewed from E's side. The earphones, for auditory stimulus, are hung over the top right hand corner. L_1 and L_2 are lights, corresponding to points 1 and 2 on the selector switch (S). M, the master or stimulus switch, is a silent mercury toggle switch.

B. Viewed from S's side. The right hand toggle switch has just been thrown to the "off" position by S, in a simple reaction. For a discrimination reaction both hands and both toggle switches would be used. The steadiness plate and stylus, shown on the left, can be plugged into the pin jacks just below the lights, the plate making a 45° angle with both base and panel.

administers the Minnesota Placing and Turning Test to his partner, and the assistant circulates around the booths with a Smedley Hand Dynamometer. All students then assemble in the center of the room, collect class data, and compute a correlation coefficient between two of the measures. They then return to the booths, and plot scatter diagrams for the remaining combinations. This experiment accompanies lectures on the nervous system, and serves to tie statistics in with behavior.

4. *Reaction Time.* Working in pairs, the students obtain 100 reaction times on each other, including simple auditory and visual discriminations, in balanced order. Fig. 1 is a picture of the apparatus used in this experiment. It is built around a Standard Electric Time Company Model S-1 Timer, mounted on a small base and panel. The auditory stimulus is an AC hum in a pair of earphones, to avoid confusion with neighboring students. The visual stimuli are given by a blue and an amber jewel dial light. Stimuli are presented by a silent G. E. mercury switch, working through a selector switch. S. responds with one of 2 bat-handled toggle switches, mounted near the edge of the baseboard so that he can operate them by pinching movement of thumb and forefinger. These reaction timers were assembled in our own shop, but even so they cost about $80.00 each. Although they represent the largest single item in our budget, they are worth it, for they are quite impressive in appearance and operation, and are used in weeks 3, 4, and 8.

5. *Learning the Elevated Finger Maze.* This is a traditional experiment, utilizing an 11 unit multiple T maze. Here again the apparatus is attractive in appearance, consisting of stainless steel wire paths on both sides of rosin-bonded mahogany plywood. The laboratory directions include a tally sheet for recording time and entrances into culs.

6. *Learning Nonsense Syllables.* Each student learns a 10 syllable list, teaches his partner one, and then relearns his own. A tally sheet permits a record of anticipatory responses, and the first 10 students to finish tabulate their scores by serial position, so that the whole class can see the relative difficulty of the beginning, middle, and end of the list. Individual memory drums[2] are used, driven by a pulse every 2 seconds, which is fed into the polarized receptacles in each booth.

7. *Thinking.* One E. observes his S. working on a modified Hanfmann-Kasanin test. Four of the blocks are mounted on a small board, and given "family names" (nonsense syllables). S. must sort the remaining blocks, to get together "all members of the same family." It is thus a study of concept formation. This experiment works nicely. E. and S. then change places, and work on a problem involving "set." The one used this year was not satisfactory, and will be replaced by another.

8. *Free Association.* This experiment seemed to be the only practical one to illustrate motivation and emotion. Partner A gives the first 50 words of the Kent-Rosanoff list to B, recording response word and time. B then administers the last 50 words, followed by the first 50, to A, and then A gives the second 50 words to B. Association times are obtained from the reaction timer, with E. actuating one key coincident with stimulus and response. Unusual response words and long times are studied as possible indications of emotional areas.

9. *Span of Perception of Reading.* Two series of dots, letters, and words, prepared on filmstrips, are presented to the class. A 300 watt S.V.E. projector is used with a translucent screen, so that the operator will not block the view of the screen. The exposure is controlled by a simple disc shutter, weighted so that it will spin through 340 degrees, and then latch itself. The operator moves it over dead center before releasing it for the next exposure. An open sector crosses in front of the lens at the point of most rapid movement. This shutter seems to be much more reliable than more delicate and complicated commercial ones.

After the students have determined their spans for materials of different degrees of complexity, they break up into the usual pairs, and examine eye movements during reading, using the peep hole technique. Some find this task to be very difficult. An eye movement camera is available for demonstration, but there is not sufficient time to take and develop records for each student.

10. *Color Mixing.* The students work in pairs, using motor driven color mixers, to verify the laws of color mixture. Formulae, in terms of percentages of 3 primaries, are worked out for all mixtures, as well as for matches with samples.

[2] Schlosberg, H., An inexpensive memory drum, *J. exper. Psychol.*, 1941, **29**, 161–163.

11. *Depth Perception.* Students work in pairs, using the Keystone "Televiewer," which is a prism stereoscope equipped with stand and illuminator. Several cards, obtained from the same company, are very useful. Thus the Stereopsis (DB-6D) slide, containing several lines of figures, each with one figure displaced by a different amount, serves to illustrate the principle of disparity, and permits the student to determine his own threshold. Another pair of cards allows the student to compare disparate and non-disparate pairs of pictures. The students also prepare simple stereograms, and even construct a crude stereoscopic range finder, cutting the reticle and airplane out of the mimeographed blank.

12. *Audition.* This is a class experiment and demonstration using a 15 watt public address system, oscillator, and record player. The instructor demonstrates and explains pitch and timbre, and then gives the corresponding tests from the Seashore series. The results from one test (pitch) are worked up in considerable detail, first in terms of local norms, and then using the psychophysical method of constant stimuli.

13. *Personality.* The Kuder Preference Record is administered and scored. The results are analyzed in terms of norms.

The laboratory has now been in operation for one semester. It has worked out very well, in spite of all the difficulties coincident with an expanded enrollment and a shortage of supplies.[3] Of course the program makes fairly large demands on the time of the Staff. Each of the 12 sections takes $2\frac{1}{2}$ hours for an instructor and his assistant, and the latter spends another 2 hours in grading and clerical work. One instructor and an assistant must each devote another 5 hours per week to general supervision of the program, setting up the apparatus, etc. A laboratory period is unquestionably more time-consuming than any other of the usual methods of instruction in the beginning course. Nevertheless all sciences have learned by experience that only laboratory work can give the student that first-hand contact with the subject matter which is indispensable to a concrete understanding of science and of the scientific method. We believe that this sort of understanding is especially important in psychology; far too often the undergraduate emerges from a course of lectures with the belief that psychology is nothing but a lot of common-sense knowledge disguised in big words. If our students—not to mention our colleagues in other departments—are to understand a large segment of modern psychology, they must learn that we collect facts in a laboratory, and that we depend on these facts rather than on hunches, guesses, and intuitions! Hence we believe that a laboratory period, required for *all* students who take the beginning or general course in psychology, can be of great importance in building up the status of psychology as a science. But if the program is to be effective, it must be done properly. Carefully prepared directions, well-finished and impressive apparatus, and decent quarters are essential if the "psych lab" period is to compare favorably with those in other departments. We believe that these facilities are well within the reach of many colleges in these days of large enrollment and changing curricula.

[3] Student reaction to the laboratory period is generally favorable. Dr. G. A. Kimble is making an analysis of the results of unsigned questionnaires, and will publish his findings.

Across the Secretary's Desk

1948 Yearbook QUESTIONNAIRE

In July questionnaires were mailed to all APA members to secure information to print in the 1948 *Yearbook*. As this is written, 2827 questionnaires have been returned. That leaves 2263 not yet returned. Some of these, probably, have simply been neglected. Some, because of faulty mailing or out-of-date addresses, may not have reached the person addressed. If you have not yet returned yours, do so. If you did not get one, write the APA office simply asking for a yearbook questionnaire. We will send you one immediately.

The 1948 *Yearbook* will contain biographical information similar to that contained in *American Men of Science*; that is, it will for everyone whose questionnaire is returned in time. For those whose questionnaires do not get here in time or are not returned at all, we can print only the name and mailing address.

ARE YOU GOING TO THE TWELFTH INTERNATIONAL CONGRESS?

American psychologists planning to attend the Twelfth International Congress of Psychology in Edinburgh next July 23–29 should begin to make travel plans now. There is still plenty of time for airplane reservations, but many of the possible steamship accommodations are already reserved for next June and July.

The trip by air takes less than 24 hours from New York. American Airlines' fare from New York to Glasgow is $550.70 round trip. Trans World Airlines' fare from New York to Shannon, Ireland, is $547.40 round trip. British Overseas Aircraft Company's fare from New York to Prestwick (near Glasgow) is $361.80 round trip. Your travel agent or one of the airlines will help you make reservations.

Those who prefer to travel by sea must not delay making reservations. The less expensive accommodations are already sold out for some ships. The United States Line has not yet announced next summer's schedule, but advance reservations are being accepted.

The Cunard Line has several ships sailing from New York to Southampton. The trip requires from 5 to 10 days. Minimum round trip fares are $730 first class, $450 cabin class, and $330 tourist.

Passage on the Empress of Canada (Canadian Pacific Lines) from Montreal to Liverpool can still be secured. Minimum first-class round-trip fare is $552. Minimum tourist-class round-trip fare is $349.60. The trip requires 7 days.

If a number of psychologists from this side of the Atlantic wish to make the trip together, that may still be possible to arrange. If you are interested in sailing with a group of other psychologists, please write me, letting me know your preferences regarding steamship line, class of accommodations, and preferred sailing date. I will let you know what can be arranged.

PERSONNEL PLACEMENT: NOTICE TO ALL REGISTRANTS

If you are registered with the placement service of the APA, please keep us informed of every change of address and every change of position you make. This information is necessary if prospective employers are to locate you. We would also be glad to know of changes in your salary. That helps determine which jobs might interest you.

Industrial and clinical positions may become vacant at any time of the year, so registrants interested in these positions must keep us constantly informed of their wishes and their addresses if they want to be considered for new positions.

At this time of year we assume that psychologists in academic positions wish to remain in them until next summer. Unless we have instructions to the contrary, we tend to eliminate them from consideration for positions which must be filled immediately. However, requests for midyear appointments, and even for next summer or fall appointments, will start appearing soon. Regardless of the type of position you prefer, send us promptly any change of address, status, or plans.—DAEL WOLFLE

Psychological Notes and News

GEORGE S. SNODDY died in Santa Monica, California on June 29, 1947 at the age of 65 years.

JAMES A. WALLACE REEVES, president of Seton Hill College, died on March 7, 1947.

WINIFRED KITTREDGE died in New York City at the age of 57 years.

STELLA HANLIN SCHULTZ died in Princeton, New Jersey on July 22, 1947.

Seven and a half million dollars has been appropriated for the mental health activities of the U. S. Public Health Service during the fiscal year 1948. The mental health program, authorized by Congress in 1946, included a threefold program of research on mental illness, development of local mental health facilities, and training of mental health personnel in addition to mental health activities within the Public Health Service. Approximately $400,000 will be awarded for research grants and fellowships, $1,050,000 for training grants and stipends, and $3,000,000 for grants-in-aid to States.

Grants have been awarded to universities, hospitals, and clinics for training in the fields of psychiatry, clinical psychology, psychiatric social work, and psychiatric nursing. The grants were recommended by the National Advisory Mental Health Council and approved by the Surgeon General. Grants for the improvement of graduate training in clinical psychology were made to University of California (Berkeley), Duke University, University of Illinois, Illinois Neuropsychiatric Institute (Chicago), State University of Iowa, University of Michigan, University of Minnesota, Northwestern University, Ohio State University, University of Pennsylvania, Princeton University, University of Rochester, Stanford University, Western Reserve University, Western State Psychiatric Institute and Clinic (Pittsburgh), and Worcester State Hospital. The Illinois Neuropsychiatric Institute, Western State Psychiatric Institute, and Worcester State Hospital will offer internship training.

A total of 129 applications for research grants in the field of mental illness were received, of which 25 have been recommended for support. Research grants have been made to the following members of the APA: W. N. KELLOGG, ROGER G. BARKER, ANNE ROE, THOMAS M. FRENCH, MARGARET BRENMAN, H. S. LIDDELL, WAYNE DENNIS, LEOPOLD BELLAK, ZYGAMUNT A. PIOTROWSKI, L. K. FRANK, and S. J. BECK.

The following have been appointed to the Advisory Panel of Consultants in Psychology, after being nominated by the APA: JOHN G. DARLEY; WILLIAM A. HUNT; CARLYLE JACOBSEN; LAURANCE F. SHAFFER; and DAEL WOLFLE. This Panel held its first meeting August 9 and 10.

The U. S. Public Health Service made a special grant to the APA to study training facilities and to develop a recommended graduate program in clinical psychology. President CARL ROGERS, after consultation with the Division of Clinical and Abnormal Psychology, appointed a Committee on Training in Clinical Psychology to conduct these studies. Members are: DAVID SHAKOW, Chairman, E. R. HILGARD, E. LOWELL KELLY, BERTHA M. LUCKEY, R. NEVITT SANFORD, and LAURANCE F. SHAFFER.

CARL ROGERS, as President of the APA, appointed a Committee on Ethical Standards in Psychology consisting of E. C. TOLMAN, Chairman, HELEN SARGENT, NICHOLAS M. HOBBS, EDWIN E. GHISELLI, JOHN C. FLANAGAN, and LLOYD N. YEPSEN. The purpose of the Committee is to develop an acceptable set of ethical standards for psychological practice.

C. M. LOUTTIT has been appointed professor of psychology and dean of the undergraduate division of the University of Illinois at Galesburg, Illinois.

JOHN E. ANDERSON, director of the Institute of Child Welfare of the University of Minnesota, will be on sabbatical leave for the year 1947–1948. In his absence DALE B. HARRIS will be acting director of the Institute.

FLORENCE L. GOODENOUGH has resigned her professorship of psychology at the Institute of Child Welfare of the University of Minnesota. Her resig-

nation was due to ill health and the desire to devote more time to research and writing.

ALICE I. BRYAN has been granted a year's leave of absence from the School of Library Service, Columbia University, to serve on the staff of the *Public Library Inquiry*. Dr. Bryan will direct the Personnel Project, one of five studies to be carried on by the *Inquiry*. These studies, conducted under the chairmanship of Dr. ROBERT LEIGH by the Social Science Research Council, have been made possible by a grant of $175,000 from the Carnegie Corporation of New York to the Council, made at the request of the American Library Association.

HORACIO J. A. RIMOLDI, Buenos Aires, and MARIANO YELA-GRANIZO, University of Madrid, are completing a year's study and research at the Psychometric Laboratory at the University of Chicago.

CAROL F. LUNDIE and MELANEY E. WHITE, both from the University of Witwatersrand, Johannesburg, South Africa, have recently arrived to study there.

HAROLD VOSS, formerly of Proctor and Gamble Company, Cincinnati, is now Assistant Chief Psychologist at the Special Devices Center, Office of Naval Research, at Sands Point, New York.

PAUL HORST, manager of the Personnel Research Department of the Proctor and Gamble Company, has accepted an appointment as professor of psychology at the University of Washington, beginning the fall of 1947.

PAUL CAMPBELL YOUNG will be visiting professor of psychology at Southern Methodist University, Dallas, for 1947–48. Dr. Young, who is also Assistant Branch Chief Clinical Psychologist for the VA in the Dallas Branch Office, will have charge of the development and administration of a training program in clinical psychology. He is on leave of absence from Louisiana State University.

GEORGE S. SPEER, director of the Institute for Psychological Services of Illinois Institute of Technology, Chicago, was elected vice-president of the National Vocational Guidance Association.

After leaving the services in September 1946, CHARLES A. KNEHR returned to Hunter College as an instructor. He is also psychologist in the Cornell University Medical College.

WESLEY O. ALVEN is now assistant professor of psychology at the University of Akron.

S. HOWARD BARTLEY has resigned as professor of research in the Visual Sciences, Dartmouth Eye Institute, to accept an appointment as professor of psychology at Michigan State College as of July 1, 1947. Dr. Bartley has recently been granted a patent for his device for measuring returning sensitivity to skin areas whose nerve supply has been cut.

LLOYD A. JEFFRESS has been appointed Hixon Professor of Psychobiology at the California Institute of Technology for the year 1947–48. He is on leave of absence from the psychology department of the University of Texas.

MERRELL E. THOMPSON has resigned from the Kent State University to accept an associate professorship at the New Mexico State College, State College, New Mexico.

MARGUERITE G. VANDEVER, formerly instructor in the department of psychology at Occidental College, Los Angeles, has been appointed director of vocational guidance and placement there.

DANIEL STARCH, GEORGE D. STODDARD, and GEORGE GALLUP were awarded Certificates of Achievement at the commencement celebrating the 100th anniversary of the founding of the University of Iowa. Certificates were given to 99 outstanding alumni of the 35,000 living graduates of the University of Iowa.

BERNARD SLESS has been appointed Staff Personnel Consultant of the Personnel Institute, New York. Prior to his appointment he was Regional Chief of Occupational Analysis and Industrial Services, U.S.E.S.

ALBERT E. CONWAY is now assistant professor of psychology at Lafayette College, Easton, Pennsylvania.

DANIEL KATZ has accepted an appointment as professor in the department of psychology and Program Director in the Survey Research Center at the University of Michigan. Dr. Katz was formerly chairman of the department of psychology at Brooklyn College.

The following people will be added to the staff of the graduate department of the City College of New York for the academic year 1947–48: RÉNÉE SPITZ, of the New York Psychoanalytic Institute; LOIS B. MURPHY of Sarah Lawrence College; and DR. BELA MITTELMANN.

RAYMOND H. FLETCHER, formerly Director of Instruction at Highland Park Schools, has joined the Texas staff and ERNEST H. WARD, formerly professor of psychology, Wittenberg College, has joined the Los Angeles staff of Rohrer, Hibler, and Replogle.

T. E. CHRISTENSEN, who was assistant professor of education and counselor at the Guidance Bureau, University of Kansas, is now assistant professor of vocational guidance at General College, Boston University.

CARTER V. GOOD, University of Cincinnati professor since 1930 and acting dean for the past three years, will succeed L. A. PECHSTEIN as dean of the Teachers College. Dr. Pechstein, who is retiring because of ill health, was dean for 25 years. He has been given the title of dean emeritus.

HARRIETT K. BECK has been appointed Psychologist for the Flint State Child Guidance Clinic.

N. L. GAGE has been appointed assistant director of the Division of Educational References, Purdue University, with the rank of assistant professor.

MOLLY HARROWER has been appointed Psychological Consultant to the United States Department of State, and Vice-Chairman of the Executive Committee of the Board of Governors of the International Committee for Mental Health.

The Chicago Psychological Club has elected MARTIN L. REYMERT, president, GORDON V. ANDERSON, vice-president, J. ANTHONY HUMPHREYS, secretary, and CHARLOTTE H. ALTMAN, treasurer, for the year 1948.

RICHARD H. HENNEMAN, formerly of the Aviation Psychology Research Unit of the Strategic Air Command, has accepted a position as associate professor at the University of Virginia.

The following psychologists were among the 24 social scientists who were awarded grants-in-aid for the completion of research projects by the Grants-in-Aid Committee of the Social Science Research Council: RAYMOND B. CATTELL, for testing a new theoretical foundation and practical technique for social attitude measurement; SAUL ROSENZWEIG, for construction of a children's form of the Rosenzweig Picture-Frustration Study; HEINZ WERNER, for experimental studies of semantic and communicative aspects of language behavior.

G. GORHAM LANE has resigned his position as assistant professor of psychology, and assistant director of Research in Aviation Psychology at the Ohio State University. He was visiting assistant professor at George Washington University in the summer session, and will be assistant professor of psychology at the University of Delaware this fall.

G. M. GILBERT has accepted appointments as visiting associate professor of psychology at Princeton University and Chief Psychologist at Lyons Veterans Hospital, New Jersey.

Nuremberg Diary, the record of his study of the Nazi war criminals was selected as the nonfiction book-of-the-month for June by the Nonfiction Book Club.

M. DUANE BOWN has accepted a position as assistant professor of psychology, beginning in the fall semester, at the University of Hawaii.

JAMES EGAN has been appointed assistant professor of psychology at the University of Wisconsin.

C. A. DICKINSON has resigned as head of the department of psychology of the University of Maine,

a position which he has held for 20 years. He will continue to teach as professor of psychology. A. DOUGLAS GIANVILLE will be acting head of the department beginning September 1, 1947.

MORGAN UPTON has been appointed professor and chairman of the department of psychology at Rutgers University. He had been associated with the Murray Corporation of Detroit as an industrial psychologist.

EDWARD R. KNIGHT has been elevated to the position of Headmaster of the Oxford Academy, New Jersey. At the age of 29 he is the youngest Headmaster in the United States.

HENRY L. SISK has accepted a position as industrial psychologist on the staff of Stevenson, Jordan, and Harrison, Inc., Chicago.

JOSEF ZATKIS, FRANCIS J. DEIGNAN, ARTHUR GLADSTONE, and DOROTHY Y. LEE have been added to the staff of the Department of Psychological Services of the Southbury Training School. They will work in clinical psychology under the direction of MILTON COTZIN, director of Psychological Services.

ROY R. ULLMAN has been appointed professor of psychology at Wittenberg College, Springfield, Ohio.

J. MCV. HUNT led the section on technical methods at the workship on research in social work held June 16–20 at the School of Applied Sciences of Western Reserve University.

LEONARD S. KOGAN of the department of psychology of the University of Rochester has been appointed assistant director of the Institute of Welfare Research in the Community Service Society of New York.

DANIEL H. HARRIS, formerly Vocational Advisor in the Brooklyn Regional Office, VA, has been appointed Chief, NP Section, Special Rehabilitation Division, Washington, D. C. Dr. Harris will plan and carry out the improvement of the vocational rehabilitation training programs of veterans with neuropsychiatric disabilities.

Farragut College has just acquired a contract with the VA to run a Class "A" Guidance Center. ANDREW N. DOW, Jr., has been added to the staff as Assistant Director of Guidance and Personnel.

BERNARD RIESS, DANIEL LEHRMAN, and IRWIN KATZ were appointed as research fellows to work in the New York Zoological Park this summer on problems of social and maternal behavior. The Zoological Society's research program, both at the Zoological Park and at the Jackson Hole Wildlife Park in Wyoming, is under the general direction of C. R. CARPENTER.

WALLACE H. WULFECK addressed the American Public Health Association at its annual meeting relating to the Merit System Unit on public health recruitment problems. RICHARD WM. WALLEN spoke on "The Adaptation of Modern Advertising Methods to the Recruitment of Personnel."

The Department of Psychology of Swarthmore College announces the following appointments to its staff: S. E. ASCH, as professor of psychology; WILLIAM C. H. PRENTICE, as assistant professor of psychology; and MARIAN HUBBELL MOWATT as lecturer in psychology and education.

Graduate work leading to the MA is offered at Swarthmore in the fields of perception, learning, personality, and social psychology. Applicants are invited to write directly to the chairman of the department, Dr. Richard S. Crutchfield.

The Second Annual Coordinating Conference was held on April 10–11, at the Western State Psychiatric Institute and Clinic, Pittsburgh. The Conference, intended to coordinate the concepts and services of psychiatry, psychiatric nursing, clinical psychology, and psychiatric social service, had as its theme *The Place of Psychiatry in General Medicine.*

At the meeting in Dallas, April 5, the Psychology Section, Southwestern Social Science Association, elected MERL E. BONNEY, president and EVELYN M. CARRINGTON, secretary. The retiring president, L. B. HOISINGTON, named a committee with OSCAR ULLRICH as chairman to study the problem of affiliation with the American Psychological Association.

The New School for Social Research, New York, will offer this fall the first course exclusively dedicated to the Thematic Apperception Test given by any university for credit. The course will be limited to a small number of properly qualified psychologists and will be taught by LEOPOLD BELLAK.

At its fifteenth annual meeting, the Chicago Society for Personality Study elected MAURICE H. KROUT president for 1947–48. MARGARET W. GERARD was elected vice-president, and MICHAEL T. KOENIG secretary-treasurer. This is the first time that a psychologist has been elected to the presidency of the Society, whose members are anthropologists, criminologists, psychoanalysts, psychologists, psychiatrists, sociologists, and representatives of related disciplines.

The psychology department of Farragut College, Farragut, Idaho, would like copies of psychological texts and journals no longer needed by members of the Association. If contributors will send in the titles and issues they have available, the department will be glad to pay all shipping costs.

The Section of Psychology, recently established in the Association of Scientific Workers, England, met for the first time at Bedford College, London, on January 18. WINIFRED RAPHAEL was the presiding officer. The speakers were: I. M. DUNSDON, H. J. EYSENCK, PEARL KING, T. H. PEAR, WINIFRED RAPHAEL, J. D. SUTHERLAND, and STEPHEN TAYLOR. Until this meeting, psychologists had met within the Association of Scientific Workers as part of the Medical Section.

The Board of Examiners of Psychologists in Connecticut completed its second year of operation on June 30, 1947, and has submitted a report to the Governor. Fifty-one psychologists were certified during the first fiscal year and twenty-seven during the past year. It is believed that a majority of psychologists who can meet the requirements of the law has now been certified. There has been general satisfaction, both within and outside the profession, with the way the law has served its function. WALTER R. MILES, Chairman of the Board, has accepted reappointment for a 3-year term. Others continuing are MARION A. BILLS and STEPHEN HABBE.

The newly formed State Psychological Association of Washington State met in Seattle on May 16 and elected the following officers: E. S. BORDIN, president; WM. M. ADAMS, vice-president; F. NOWELL JONES, secretary-treasurer, and H. M. HOUTCHENS and RALPH GUNDLACH, members at large of the executive committee.

A Conference on Motor Skills Research was held at the Special Devices Center, Office of Naval Research, Sands Point, New York, on June 26–27. Sessions were held on current and planned research in motor skills, psycho-motor research in relation to military problems, and on topics relating to psychomotor research.

Section I, Psychology, of the AAAS, will hold sessions December 29–30, at Chicago. Members wishing to present papers should send abstracts to the secretary, Dr. Harold E. Burtt, Department of Psychology, Ohio State University, Columbus 10, Ohio. Abstracts should be in triplicate, not over 200 words, and must be received by September 22 if they are to be considered. If slides, charts, or blackboard are necessary, a statement to that effect should be made at the end of the abstract. Time required should be specified—maximum 15 minutes. In the case of slides specify whether they are 2″ x 2″ or 3¼″ x 4″. Moving pictures will not be shown in conjunction with a paper.

The July AMERICAN PSYCHOLOGIST announced a Postgraduate Institute of Applied Psychology, conducted by the Illinois Association for Applied Psychology in cooperation with Northwestern University. It was planned for August 15–16. This Institute has been postponed.

The Directors and Stockholders of The Psychological Corporation have approved the issuance of 4,000 additional shares of stock of the Corporation to be offered for sale to psychologists.

The Stockholders at a special meeting on December 6, 1946 decided to replace each of the original 1,000 shares of stock by four new shares and to offer for sale 4,000 additional shares at a price of $25 per share. The principal need for new capital is the expansion and development of the Corporation's activities, particularly in the field of tests, where

sizable investments in research and inventory are essential to sound publications and sales.

The first report of the President's Commission on Higher Education, tentatively titled, *Teachers for Higher Education*, is now available by writing the President's Commission on Higher Education, Washington 25, D. C. This report gives a picture of college teacher salaries, tenure, retirement, and recruitment.

The Life Insurance Agency Management Association, Hartford, Connecticut, has openings for two psychologists interested in problems of selection and personnel evaluation, or market studies. The PhD or its equivalent in experience is required. The salary will be from $4000 to $5000. For further information write S. Rains Wallace, Jr., Life Insurance Agency Management Association, 115 Broad Street, Hartford 5, Connecticut.

The Bureau of Personnel, State Capitol, Madison, Wisconsin, has an opening for a Psychologist III. The necessary qualifications are three years experience in clinical psychology with supervised field experience. The salary will be $250 per month with $30 bonus. For further information write the above address.

Beginning October 1, the McLean Hospital will have openings for interns in clinical psychology for periods from six months to a year. A BA in psychology is required and some experience in testing is desirable. Part time work in graduate schools in Boston is possible. Applications should be directed to Dr. W. Franklin Wood, Director, McLean Hospital, Waverly 79, Massachusetts.

The Lapeer State Home and Training School, an institution for mental defectives, invites applications for the position of Psychologist III, Head of Department. Salary is $3600–4200. The minimum requirements are an MA in clinical psychology with four years' experience. Institutional residence is optional. Applications should be sent to Dr. E. E. Cooper, Medical Superintendent, Drawer A, Lapeer, Michigan.

The position of psychologist is open at the Youngstown Receiving Hospital. It requires a graduate degree from a recognized school of psychology with experience in the psychiatric and mental hygiene fields. The salary range is $3000–4000. Correspondence should be directed to Dr. E. E. Elder, Superintendent, Youngstown Receiving Hospital, Youngstown, Ohio.

The Guidance Center in New Orleans announces a fellowship in clinical psychology designed to provide experience in the administration and interpretation of psychological tests. Appointment is for one year with a stipend of $2000. Applicants should have an MA in psychology and be familiar with tests for children of all ages. Address all inquiries to Dr. Milton E. Kirkpatrick, Medical Director, The Guidance Center, 1737 Prytania Street, New Orleans 13, Louisiana.

The Lincoln State School and Colony has vacancies for the positions of Psychologist I and II. The salary range for Psychologist I is $190–245 per month. Applicants should have an MA or equivalent. Some clinical experience is desirable. The salary range for Psychologist II is $230–290. Applicants should have an MA and at least one year of competent clinical experience. For both positions, full maintenance is provided at a cost of $32 per month. Inquiries should be addressed to Dr. William W. Fox, Superintendent, Lincoln State School and Colony, Lincoln, Illinois.

The Moosheart Laboratory for Child Research has an opening for a physiological psychologist with special training in electroencephalography. The salary is $3300 a year. Further information may be obtained by writing Dr. Martin L. Reymert at the above address.

The California Department of Corrections announces an examination, open only to residents of California, for the position of Vocational Counselor in the Prison Guidance Center. Minimum requirements are an AB and three years of experience. Salaries range from $376 to $458 a month. Closing date for receipt of applications is September 25. For further information write Department of Corrections, 417–429 State Office Building No. 1, Sacramento 14, California.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 October, 1947 Number 10

In this Issue

Proceedings of the Thirty-Ninth Annual Meeting of the Southern Society for Philosophy and Psychology: JOSEPH WEITZ 397

Proceedings of the Twenty-Seventh Annual Meeting of the Western Psychological Association: LESTER F. BECK 404

Proceedings of the Nineteenth Annual Meeting of the Midwestern Psychological Association: CLAUDE E. BUXTON 419

Proceedings of the Eighteenth Annual Meeting of the Eastern Psychological Association: J. MCV. HUNT 429

The Sensible Organization of Courses in Psychology: DAEL WOLFLE . 437

On Defining Psychology as a Profession: CLAIRETTE P. ARMSTRONG 446

Across the Secretary's Desk 449

Psychological Notes and News 451

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879. Acceptance for mailing at special rate of postage provided for in section 538, Act of February 25, 1925, authorized August 6, 1947.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

DONALD G. MARQUIS
University of Michigan
Ann Arbor

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
ERNEST R. HILGARD Stanford University California	HELEN PEAK Connecticut College New London	CARROLL L. SHARTLE The Ohio State University Columbus 10, Ohio	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER
ROBERT R. SEARS
THEODORE M. NEWCOMB

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.

Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.

Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.

Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.

Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.

Subscription: $5.00 (Foreign $5.50). Single copies, $1.00.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, University of Illinois, Galesburg, Illinois. Contains noncritical abstracts of the world's literature inpsychology and related subjects; monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.

Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.

Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.

Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

PROCEEDINGS OF THE THIRTY-NINTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

JOSEPH WEITZ, *Secretary*

Newcomb College, Tulane University

THE Southern Society for Philosophy and Psychology held its Thirty-ninth Annual Meeting at St. Louis, Missouri, April 3 to 5, 1947. Washington University was the host institution. All meetings were held in the Chase Hotel. Arrangements for the meetings were made by Dr. John Paul Nafe. The program committee consisted of Lewis O. Kattsoff, John P. Nafe, R. L. Patterson, S. Rains Wallace, and Joseph Weitz, Chairman.

The Council of the Society, presided over by Dr. Peter A. Carmichael, met the evening of April 3. Council members present were Meredith Crawford, Elizabeth Duffy, Frank A. Geldard, Harold N. Lee, Katharine Omwake, Herbert C. Sanborn, and Joseph Weitz.

Two sessions in psychology and two sessions in philosophy were held on Friday. On Saturday morning there was a joint session of philosophy and psychology. Chairmen of the psychology sessions were Frank A. Geldard and John P. Nafe. Chairmen of the philosophy sessions were William Weedon and Harold N. Lee. Chairman of the joint session was Peter A. Carmichael.

At four o'clock on Friday afternoon, members of the Society were entertained by Dr. Meltzer and members of the staff of Washington University.

The annual banquet of the Society was held Friday evening at seven o'clock at the Chase Hotel. Dr. Peter A. Carmichael delivered the presidential address, entitled "The Limits of Method."

The annual business meeting convened at eleven o'clock Saturday morning. Dr. Peter A. Carmichael presided.

MINUTES OF THE ANNUAL BUSINESS MEETING

President Carmichael called the meeting to order. The minutes of the Thirty-eighth Annual Business Meeting were approved as published in the AMERICAN PSYCHOLOGIST, 1946, **1**, 438–447.

The report of the secretary was read and approved. The report contained an account of the activities of the Secretary's office since the last meeting of the Society.

It was reported that during the last year two members of the Society had died. These were Dr. Gillentine and Dr. Ross. Two members withdrew from the Society, Dr. Wendt and Dr. Edds. The total number of members at the time of the Thirty-Ninth Annual Meeting was 265.

The report of the Treasurer was read and approved. The balance in the treasury as of April 1, 1947, was reported as $1,569.03.

Dr. Balz presented a report from the Standing Committee on Philosophy. He stated that it was possible that the committee might need an additional one hundred dollars for completion of the work, and further suggested that the results of the committee might be published. Dr. Sanborn moved that an additional one hundred dollars be granted this committee. The motion was seconded and passed.

On the recommendation of the Council, five new associate members were admitted to the Society and eighteen members. The associate members are: Harold Edwin Masengill, Jr., Morley Mays, Arthur DeWitt Ripley, Rosamond Kent Sprague, and A. Lee Wheeler. The full members are: Warren Ashby, Robert Poindexter Barrell, Emmoran Benjamin Cobb, Charles Norval Cofer, Philip Hunter DuBois, William Franklin Dukes, Elizabeth Fehrer, Frank Prentice Gatling, Robert Moore Hughes, Margaret Ruffin Hyde, Sidney Janus, Adrienne Koch, Karl David Kryter, Hamilton Mark Moody, Marguerite (Ekdahl) Topper, Robert Carlton Topper, William Gatewood Workman, and Philip Worchel.

Upon recommendation of the Council, Dr. B. von Haller Gilmer was unanimously elected President of

the Society and Dr. William S. Weedon and Dr. S. Rains Wallace were elected to the Council.

Upon recommendation of the Council, the members voted to have the next annual meeting at Atlanta, Georgia.

The members had been polled as to the desirability of holding the meetings at some time other than Easter. Of those returning ballots, 111 preferred to have the meetings at Easter, 18 gave no preference, 43 gave no answer, and 14 wanted the meetings at some time other than Easter.

The Secretary announced that the Treasurer has been instructed to waive the payment of dues of any member who has retired from active professional duty.

Upon motion of Dr. H. N. Lee the Society went on record as extending its thanks to Washington University, and especially to Dr. John P. Nafe, Dr. Meltzer, and the Chase Hotel for their hospitality.

The meeting was then adjourned.

PROGRAM

Friday Morning Session, April 4, 1947

PSYCHOLOGY

FRANK A. GELDARD, *Chairman*

Additional Data on Correlation Interpretation. *Henry F. Dickenson, Lincoln Memorial University.*

By means of a new coin dropping device, 44,429 cases of evidence have been amassed invalidating certain assumptions regarding the interpretation of the correlation coefficient.

Is There a Dichotomy in Energy Mobilization? *Elizabeth Duffy, The Woman's College of the University of N. C.*

In psychology there appears to have grown up the curious assumption—not explicitly stated in these terms—that the individual functions at two distinct levels of energy mobilization, one the energy level of emotion, and the other the energy level of non-emotional conditions. The writer has repeatedly protested the dichotomizing of "emotion" and "non-emotion," and has suggested that the phenomena of emotion occur in a continuum, or rather in a number of continua.

Data will be presented, from experiments conducted in collaboration with Dr. Oliver L. Lacey, to show that energy mobilization (as indicated by palmar skin conductance) is finely adjusted to the requirements of the situation, varying with the nature of the task, the degree of adaptation to the task, and the individual performing the task. The phenomena observed are more in harmony with a theory of continuous variations in energy mobilization than with a theory of a dichotomy between the energy mobilization of "emotion" and that of "non-emotion."

"Facial Vision": The Perception of Obstacles by the Deaf-Blind. *P. Worchel, Tulane University and K. M. Dallenbach, Cornell University.*

In order to resolve the many contradictions in the interpretation of the cues utilized by the blind in avoiding obstacles Supa, Cotzin, Dallenbach, in 1940, performed a series of seven experiments on two blind and two sighted subjects. Since their subjects failed to perceive the obstacle only when both ears were plugged, they concluded that aural cues were necessary and sufficient for the perception.

The present study attempts to determine whether the aural mechanisms which were shown to serve as the cues for the perception of obstacles are auditory or cutaneous sensations from the external ear.

Ten deaf-blind subjects whose deafness was of internal origin and thus whose auditory meatuses and tympanums were functional were brought to the laboratory. With few exceptions, conditions duplicated those in the previous investigation. Results indicated that such "successes" as occurred were, as the mathematical treatment of the data reveals, due to chance. Analysis of the individual performances supported the "chance" hypothesis.

The conclusion that pressure sensations from the auditory meatus and tympanic membrane are not necessary and sufficient conditions for obstacle perception seems justified.

A Simple Circuit for the Measurement of the Galvanic Skin Response and of the Level of Galvanic Skin Resistance. *Oliver L. Lacey and Paul S. Siegel, University of Alabama.*

A simple instrument for the measurement of skin resistance under the desirable condition of constant current for all subjects will be described. The circuit employed in the apparatus is essentially a voltage divider by means of which the potential drop across the subject is adjusted to produce a standard current. The subject's resistance is then readily computed by Ohm's Law.

The instrument has been found satisfactory in practice both for class demonstration and for research purposes.

The Pattern of Convulsive Behavior in Albino Rats under Metrazol Injection. *Cecil W. Mann, Tulane University of Louisiana.*

Using metrazol dosage, interperitoneally, sufficient to produce convulsions, comparisons were made between the behavior of rats in a control group and rats with small amounts of cerebral extirpation. In both groups there was a fairly definite pattern of behavior. In the experimental group there was delay in the onset of convulsive spasm, secondary spasms were more marked and the pattern was extended over a longer period.

The Concept of the Psychopath. *Hulsey Cason, U.S. Public Health Service, Springfield, Mo.*

The concept of psychopathic personality has been widely used in the United States and in Europe, and the psychopath is generally recognized as a critical problem. The problem, however, has continued to be somewhat elusive. In the present paper we shall attempt to describe the psychopath in connection with primitive drives, antisocial modes of behavior, and the control of primitive antisocial behavior. Psychopathic personality may be defined as a personality reaction type and a functional condition of the individual in which there is a serious lack of ability to control several of the primitive drives and antisocial modes of behavior. When a person cannot control some of his primitive antisocial modes of behavior, he may be said to be psychopathic with respect to these modes of behavior. Being psychopathic does not depend upon the absolute strength of the primitive antisocial tendency or upon the absolute strength of the acquired control, but upon the relative strength of the primitive antisocial tendency and the control. The psychopath may be conceived and described as a natural, human, and fairly easily recognizable type of person.

The Effects of Maze Rotation on Learning. *Maurice Curtis Langhorne, Emory University.*

102 college students, 68 men and 34 girls, learned to two perfect trials the lower part of the Miles Two-story maze. All subjects learned the original or O° position and then were assigned to groups. The assignment followed no selective principle. The first group learned the maze in four additional positions on successive days with a 90° counter-clockwise rotation each day; the second group learned only the 90° position 24 hours later; the third group repeated the original position after 24 hours; the fourth repeated the original position after a four day interval. Trials, time, errors were measured. Data are presented in three ways: the absolute differences between men and girls for the original position; the mean per cent of gain for each group for each position; the per cent of gain for each individual for each change. The men learned the original position with greater ease than the girls, the differences being significant statistically. These sex differences were not significant for the other positions. The first 90° rotation produced significant disturbances in the learning of the girls when compared with those repeating the original position after the same interval. The men were disturbed but not so greatly. Each successive change in position of the maze caused less disturbance. The four day interval between learning the O° position and repeating it did not produce results in any way different from learning the original position and repeating it one day later.

PHILOSOPHY

HAROLD N. LEE, *Chairman*

Some Thoughts on Philosophical Style. *Rosamond Kent Sprague, Bryn Mawr College.*

A good style is not always considered a virtue in philosophical writing. This may be because some philosophers have confounded obscurity with profundity. But if the philosopher cannot make himself clear to his readers, his readers have the right to suspect that he may not be clear to himself. Philosophers should strive for clarity of expression even at the risk of making a difficult thing look easy. The problems of terminology, structure, and audience are the most significant in this context.

Metaphysics and Metaphor. *Edward Goodwin Ballard, Tulane University of Louisiana.*

In this paper I wish to say what a metaphysical proposition is. It seems that a metaphysical proposition has at least these characteristics: it is non-empirical; it is non-literal; it is "fundamental." The body of the paper will discuss these three prescriptions, especially the last. It ought to end with something like a definition of metaphysics.

Philosophy and Psychoanalysis. *Martin E. Lean, University of North Carolina.*

The phenomena of unconscious mental processes and the undeniable soundness of much of psychoanalytic theory have a relevant and important bearing on several aspects of philosophy. While the concept of unconscious symbolism and motivation cannot impugn the validity of purely logical (i.e., deductive-analytic) reasoning, it is relevant to the evaluation of ethical, social and political beliefs. It is applicable to philosophical "ways of life," or weltanschauungen—in short, to those branches of philosophical thinking where temperament and opinion are inescapable. The relevance of psychology for philosophy of religion and aesthetics has never been denied. Finally, the facts and theories of psychoanalytic psychology demand greater sophistication in our conception of scientific method and explanation. The widespread antagonism to psychoanalysis among psychologists as well as among philosophers is largely the result of a merely superficial acquaintance with the theoretical literature and clinical data.

The Subject-Matter of Cosmology. *W. S. Weedon, University of Virginia.*

Cosmology, if it is to possess a distinct viewpoint and subject-matter, must justify its existence in the face of the conflict between the positions associated with the classic "realism" and the doctrines issuing from the Kantian and neo-Kantian views on the critical limitations of "knowledge." Actually the conflict may be stated in more general terms, and the conditions for the possibility of the existence of cosmology as a separate branch of philosophy may thus be brought into direct relation with the problems of the nature of man. In terms of such a generalized statement, some account would appear possible of the "good" of cosmology; and the way would seem thereby opened for a "Platonic" definition.

Why is Philosophy off Center? *Fritz Marti, Marietta College.*

Some think little time may be left for liberal education to save the day. They fear an early success of the rebellion of the masses against the difficult obligations upon any who would be heirs to occidental culture. Mass civilization tends to be mechanical and superstitious.

Philosophy is the dissolvent of superstition and mechanism. Why can institutions dedicated to liberal education not afford to assign philosophy its central place?

It may not be entirely unrealistic to distinguish between three kinds of college students, (1) those who feel no need of a reflective center of life, and whose pragmatic cravings have twisted many a collegiate procedure into a tool of mass rebellion, (2) those who cling to the remnants of an ecclesiastic core of life, once virile and vigorous, but now effeminate and on the wane, and (3) those who implicitly feel, though they may not know explicitly that the homecoming day of their soul falls into a period which, perhaps, should be called post-Christian.

As yet there is not much evidence that colleges deliberately plan to cater to one or two of the three kinds of students and not to the third. Some colleges still seem to try the impossible reconciliation of pragmatic with Christian goals. A few seem to believe in an alleged compatibility of the trite pragmatic with the pregnant post-Christian ends. There seem to be none who realize that the Christian and the post-Christian alone are the compatible couple. Consequently no college appears to recognize fully the definite need for philosophy felt by so many students of the second and third type.

Friday Afternoon Session, April 4, 1947

PSYCHOLOGY

JOHN PAUL NAFE, *Chairman*

The Voluntary Water Intake of the Rat and Sodium Pentobarbital Induced Hemodilution. *Irving E. Alexander and Paul S. Siegel, University of Alabama.*

Forty male albino rats were employed in an experiment which measured voluntary water intake following the intraperitoneal administration of physiological saline and following the injection of a mild dose of pentobarbital sodium. A comparison of voluntary water intake after isotonic saline injection with oral intake following sodium pentobarbital injection yielded a statistically significant difference.

It was found that the sodium pentobarbital depressed drinking. An explanation is offered in terms of hemodilution.

The Relationship between Period of Water Privation, Weight Loss, and Voluntary Water Intake in the Rat. *Paul S. Siegel, University of Alabama.*

Sixty adult male rats were employed in this experiment. Oral intake of water was measured for a twenty minute period following 0, 6, 12, 24 and 48 hours of water privation. Body weight loss following these privation intervals was also examined. The two curves are presented with tentative idenification of the mathematical functions.

Labor Turnover and its Correlates. *Willard A. Kerr, Tulane University.*

The relationship between labor turnover and each of twenty-five to forty-three other variables in departments of two manufacturing plants is determined. Factors studied include psychological variables such as job monotony, promotion probability, social prestige of average job, supervisory quality, sex balance, and other variables such as wages, overtime earnings, hours worked per day, accidents, and absenteeism. When forty-three of these variables were correlated with labor turnover, eleven were found to be significantly related, particularly per cent of hourly employees who are female, few hours worked per week per hourly female, low hourly earnings of hourly males, sex hours differential, low job prestige, job monotony, incentive wage system, and low morale (union rating). Some of the relationships are further clarified by technique of partial correlation. Three statistics, turnover, avoidable turnover, and avoidable separation rate, are compared and their limitations noted.

Color Vision and Camouflage Detection. *S. Rains Wallace, Life Insurance Agency Management Association.*

A Comparison of the Requisite Aptitudes for Contact and for Instrument Flying. *R. H. Henneman, AAF Strategic Air Command.*

The increasing attention to all-weather flying in the post-war Air Forces is emphasizing increasingly the importance of instrument flying proficiency. Results bearing on this current problem in pilot selection were obtained from a field study carried out at Santa Ana, California, during the war. Extreme proficiency groups of "best" and "poorest" aviation cadets in *contact* and in *instrument* flying were selected on the basis of their flying records at five basic flying schools. Classification "stanines" and the twenty individual tests of the battery were then compared as to their statistical discrimination between these two proficiency groups for the two types of flying training. The navigator stanine was found to predict significantly success in instrument flying, but to be essentially unrelated to contact flying proficiency. Individual test discrimination between "best" and "poorest" groups also differed markedly for the two types of flying. The apparent evidence for different aptitude patterns for success in contact and in instrument flying suggests the advisability of revising an aircrew classification battery to be used for pilot selection in the future.

Analysis of "Pilot Errors" in Operating Aircraft Controls. *Paul Fitts, Aero-Medical Laboratory.*

An extensive research program is underway to determine psychological principles and requirements that will enable engineers to design machine controls for most efficient human use. Major emphasis is given to research most likely to have application to aeronautical engineering. In planning the research program in this field, it was decided that one of the first steps would be to determine the nature and frequency of difficulties encountered by operators of present type equipment. Accordingly, an investigation was conducted into the causes of errors made by pilots in operating aircraft controls.

Accounts of actual experiences were obtained rather that statements of generalized opinions, in order to reduce the sources of bias and unreliability in the data. Three methods were employed in collecting accounts of experiences—individual recorded interviews, group recorded interviews, and written reports.

In the present paper is presented a classification of types of errors made in operating controls. The frequencies of each type, based upon preliminary results, are reported. Implications of the findings for a research program on equipment design are discussed.

PHILOSOPHY

WILLIAM S. WEEDON, *Chairman*

Postulates, Hypotheses and Presuppositions. *Harold N. Lee, Tulane University*

The aim of this paper will be two-fold: it will be concerned in part with the logical analysis of the

concepts named in the title, and in part with the semantic usage of the terms. In connection with the latter aim I shall express my preference in semantic usage.

A postulate is a purely formal logical assumption. It has no necessary reference to the content of experience. An hypothesis is a general explanatory principle that *does* refer to the content of experience. Although based on the logical relation of implication it includes a necessary reference to content. A presupposition is not a logical concept. The term has only a semantic reference in pointing out principles unwittingly assumed in any argument; and to hold that a presupposition can be established by its consequences is spurious.

A Criticism of Logical Positivism. *A. Ritley, Los Angeles, California.*

This paper will summarize briefly the theory of meaning advanced by Rudolph Carnap, and then proceed to a criticism of this theory. A broadened verifiability theory of meaning will then be developed, and the paper will conclude by pointing out that Carnap's theory of meaning refers to a special class of propositions, which are covered by, but do not exhaust, the applications of the broadened theory.

In the development of the broadened theory of meaning distinction will be made between direct and indirect verification, between perspective constants and perspective variables, and between equivocal and unequivocal verification. The general thesis will be advanced that any proposition has meaning if it is capable of verification, whether direct or indirect, equivocal or unequivocal.

The Primary and Secondary Qualities of Time. *Lewis White Beck, University of Delaware.*

The common distinction between objective and subjective time is a special case of a more general distinction between the time order in which events occur (existential time) and the time order in which they are known (gnoseological time). There is, in addition, another distinction which should be drawn and which does not coincide with these. It is the distinction between primary and secondary time, i.e., time qualified by primary qualities only, and by both primary and secondary qualities, respectively. Many problems in epistemology have arisen through a confusion of these distinctions. When these distinctions, especially the latter, are carefully drawn, some of these problems are considerably simplified. This will be shown in the case of transtemporal reference in perception and several other problems and paradoxes.

Inwardness as a Basis for Ethics. *A. L. Wheeler, University of North Carolina.*

The ethical and inwardness are the same in Soren Kierkegaard. Inwardness is achieved by an act of total resignation. The subject renounces all interest in the outer effect of his actions, on both himself and others, concentrating on the inward quality of his will. Neither rewards nor success are taken into consideration. Immorality begins with an orientation of our actions towards an outer goal.

The Unity of the Self. *James A. Pait, Emory University.*

This paper is based upon Kierkegaard's analysis of the aesthetic, moral, and religious stages of life. The question of the unity of the self arises when the nature of the three stages is examined. If these stages are discrete, as he appears to indicate, there can be no unity of the self and the possibility of an existential philosophy on grounds established by Kierkegaard is denied. However, if the stages emerge from one another, unity of the self is asserted, but Kierkegaard may be an Hegelian *malgre lui*. The implications of these viewpoints for existentialism are examined, and an evaluation of existentialist thought is attempted.

Philosophical Mysticism. *Anna Forbes Liddell, Florida State College.*

Many modern critics rule out mysticism as unscientific; the schoolmen rejected it as unorthodox. Both objections are essentially the same: immediate certainty transcends the limits of logical thinking, deductive as well as inductive.

The ghost will not be laid; it walks the length of our philosophical history from Pythagoras to Montague; modern naturalists have succeeded no more than Ionian physicists in exorcising this troublesome spirit.

In this paper the writer undertakes to explain why such efforts have to fail, and to show that what is properly called mystical experience is as normal and necessary as is sensation.

Mysticism is the act of realization; it is immediate, spontaneous acceptance of experience. Mysticism has no critical method; it swallows whole. Science has been described as critical common sense. Through science knowledge advances; the character of the content of experience is changed. At the level of mere *common sense*, mysticism is what Santayana happily calls "animal faith." Philosophical mysticism is far removed from "animal faith". In the realization of experience, "animal faith" is the actual, necessary beginning; philosophical mysticism is the fulfillment. "Animal faith" makes no demand upon conceptual knowledge; the mystical moment of insight does not come to the philosopher until after conceptual thinking has reached its utmost limit.

The enquiring or scientific mind is distrustful, even contemptuous of mysticism, not recognizing that only with reference to the realization of truth (the mystical monent in experience) do its own questions become pertinent. Only within the continuum of reality which mysticism apprehends can the process of science be carried on.

The writer will clearly differentiate philosophical mysticism from mystery cults, "second sight," and divination. The study will be based on the philosophy of Nicholas of Cusa as expressed in his chief work, *de Docta Igorantia.*

Saturday, April 5, 1947

JOINT SESSION

PETER A. CARMICHAEL, *Chairman*

Some Conjectures Concerning the Relations of Philosophy and Psychology. *Albert G. A. Balz, University of Virginia.*

Interrelations between Science and Logic in Psychotechnology. *H. M. Johnson, Tulane University.*

Against certain durable superstitions I assert: (1) that every genuine technology, like every special science or set of sciences, originated in arts and practices; and that it is essentially a systematization thereof—and a fruitful systematization at that; (2) that the structure of every technology, and therefore its rules of description, depends on some system of postulates and a set of rules of reasoning which we call logic; (3) that this logic comprises the whole of Aristotle's, when the latter has been cleared of certain well known defects; (4) that no genuine technology uses fact-finding procedures or rules of reasoning that would be invalid in any empirical science; (5) that not even the motives of the technologist and the scientist are separable, for understanding and control are not separable except by a fictitious boundary; (6) that in our finest samples of technology the workers have borrowed freely from many intersecting sciences, and both in method, theory and attainments they have returned the loan with interest. (7) Thus, the technologist is not an intruder if he tries to solve his own problems without waiting on the "pure" scientist in his ivory walled laboratory. He is not necessarily dependent on the pure scientist, but he is dependent on the logician and the mathematician.

Thus we need to distinguish between the technology and technique; between technologists and technicians. It has been suggested that such psychotechnicians as psychometrists (i.e., mental testers), educational and vocational guiders, psychoanalysts, are embryonic scientists or technicians whose procedures are still in a pre-scientific stage. But in so far as one employs anti-scientific presuppositions or a paralogic then one works not in a pre-scientific stage but rather in an anti-scientific stage.

Philosophies and Psychologies. *Herbert Sanborn.*

The interdependence of philosophies and psychologies is discussed with specifications. Realistic psychology founded on dogmatic realism operates with alleged independent psychic facts, which it purports to describe and explain by hypotheses and so called empirical norms derived from contexts. From a critical point of view psychology receives its problems from naive common sense philosophy of religion, ethics, aesthetics, education, epistemology, etc., and attempts some verification and validation of these data from practical life. Various forms of psychological methodology reveal a dialectic or progressive evolution in the solution of fundamental problems, which are seen, here as elsewhere, to be either pseudo-problems or at the best merely asymptotic approximations. Philosophy independent of psychology and psychology independent of philosophy are, taken *au pied de la lettre*, empty abstractions, resulting respectively in mere logicism or psychologism.

PROCEEDINGS OF THE TWENTY-SEVENTH ANNUAL MEETING OF THE WESTERN PSYCHOLOGICAL ASSOCIATION

LESTER F. BECK, *Secretary-Treasurer*

University of Oregon

THE Western Psychological Association held its twenty-seventh annual meeting on the campus of San Diego State College, June 19–20, 1947, with H. C. Steinmetz serving as local chairman. Other members of the local committee on arrangements were I. N. McCollom, M. W. Hays, O. J. Kaplan, W. H. Lucio, and H. C. Peiffer. Registered for the meeting were 166 members of the Association and more than 150 visitors, most of whom were fellow scientists attending the concurrent sessions of the American Association for the Advancement of Science (Pacific Division). The WPA sessions were integrated with the general program of the AAAS.

The WPA meeting was opened with an address of welcome by Dr. Walter R. Hepner, president of San Diego State College. This was followed by a joint session on statistical methods with the Institute of Mathematical Statistics, Helen Walker presiding. Other sessions during the two-day meeting were devoted to papers in the fields of learning, attitudes, test construction and analysis, child development, social and abnormal behavior, and clinical applications.

A round-table discussion of "The Psychologist's Role in Psychotherapy" was conducted Thursday afternoon by Theodore R. Sarbin, Boyd McCandless, S. M Wesley, H. C. Steinmetz, Howard Hunt, and J. G. Miller. Thursday evening, the presidential address, "Some Lessons from Aviation Psychology", was delivered by J. P. Guilford. On Friday afternoon an open forum relating to problems of veterans' guidance attracted a large group of active participants.

Officers of the Association, elected for the year 1947–48, are: President, R. C. Tryon, University of California; Vice-President, R. W. Leeper, University of Oregon; Secretary-Treasurer, Lester F. Beck, University of Oregon. The Association will hold its 1948 meeting June 17 and 18 at San Francisco State College.

PROGRAM OF PAPERS

Thursday Morning, June 19

Session I-A: STATISTICAL METHODS

Joint Session with the Institute of Mathematical Statistics

HELEN WALKER, *Chairman*

Statistical Criteria of the Effectiveness of Selective Procedures. *R. F. Jarrett, University of California.*

Many statistical devices are deficient in that they do not permit a satisfactorily precise estimate of the dollar value of the increased output expected from the selection program and thus leave unsettled the question as to whether or not the cost of such a program is justified. The relationship between the correlation coefficient on the one hand and the mean value of Y for an unselected population (Y being an objective output-type criterion), the standard deviation of Y for an unselected population, and the mean value of Y for the upper Np individuals selected on the basis of their high performances on the selective test X, on the other hand, provide the basis for estimating the increase in the mean output of a group of workers selected on the basis of a testing program yielding any specified validity coefficient with the criterion Y. Increase in productivity of selected workers is shown to be a function of the validity coefficient, the rigorousness of selection, and the coefficient of variability of the output criterion among "unselected" employees.

Unsolved Statistical Problems Arising in Psychological Measurements. *Helen Walker, Columbia University* (no abstract).

Cost Utility Curves as a Means of Assessing Batteries of Tests. *Joseph Berkson, Mayo Clinic* (no abstract).

Approaches to Univocal Factor Scores. *J. P. Guilford, University of Southern California.*

Despite a wide need for univocal factor scores, it appears to be impossible by present methods to construct pure tests for some common factors. Recourse must therefore be made to statistical control of component variances. The availability of a few univocal tests makes it fairly easy to derive each factor score from a minimum number of tests. Such tests serve well as suppression variables for their common-factor variances where not wanted in other tests.

Several principles may be invoked as objectives: (1) to maximize the desired variance in the impure test, (2) to reduce the undesired variance to zero, or (3) to minimize the undesired variance without intolerable loss of the desired variance. A secondary objective is to assure a combining weight of +1.00 for the test measuring the desired factor. Equations for achieving the objectives have been derived and the limitations and implications of each procedure have been noted. Thus, the situation seems hopeful for the achievement of univocal scores for a fairly large number of unique psychological variables. There are implications for experimental psychology as well as for vocational testing.

A Method of Binomial Analysis. *J. A. Gengerelli, University of California at Los Angeles.*

A method of analysis is presented which attempts to describe distributions of scores on psychological functions in terms of the parameters of the binomial $(p + q)^n$. The fundamental assumption is made that distributions of scores on psychological functions are generated by n independent, equally probable unit determiners, where n is finite.

From the expression for Beta_1 and Beta_2 for binomial distributions, a pair of simultaneous equations are formed which may be solved for n and p when Beta_1 and Beta_2 of the empirical distribution are inserted.

Results of the application of this method to data obtained in an experiment involving the effect of practice on variability are described.

Session I-B: ABNORMAL

ROY M. DORCUS, *Chairman*

A Study of the Personality of Alcoholics. *R. E. Harris, Langley Porter Clinic,* and *V. M. Ives, University of Southern California.*

An experimental group of 19 chronic alcoholics was matched for age, sex, and estimated IQ with a control group of mixed psychoneurotics. The subjects were given a battery of psychological tests including the Rorschach and the Minnesota Multiphasic. Comparisons were made with the control group and with available data on normal subjects. Each subject in the experimental group was rated by one psychiatrist familiar with all of the cases on a trait rating scale designed to summarize clinical features.

The results suggest a general neurotic structure for the alcoholics with some specific features which distinguish them from the control group. Outstanding among these is the evidence of considerable intra-individual conflict in the alcoholics with less disturbance in general social emotional relationships than the control group. The Minnesota Multiphasic shows elevations on the Pd scale greater for the alcoholics than for the control group, with significant emphases on the items relating to self-rapport.

Rorschach Studies on Alcoholism. *Charlotte Buhler, Los Angeles County Hospital.*

Rorschachs were given to 100 alcoholics, and the total mixed group of alcoholics' Rorschach sign distributions was compared with non-alcoholic groups of cases defined as normals, psychoneurotics, psychopathic personalities, organic defectives, and psychotics. The sign patterns of these groups had been obtained in the course of a standardization study on Rorschach sign distributions in various clinical groups. A list of 100 signs had been set up during this procedure, as it was with the alcoholics. The alcoholics' pattern compared closest to the psychopathic and organic patterns.

After subdivision of the alcoholic group into psychiatric clinical groups, the alcoholic psychoneurotics and the alcoholic psychopaths were compared with corresponding non-alcoholic groups. Two signs were found to be outstandingly significant in all alcoholic groups: low m and relatively high $(k + K)$. This sign pattern was analyzed theo-

retically and led to a specific dynamic interpretation of the alcoholic personality's emotional predicament.

An Attempt to Quantify Rorschach Responses. *D. Welty Lefever, University of Southern California.*

A graphic technique is briefly introduced for interpreting Rorschach responses (in the relatively objective form of carefully defined "signs") by plotting the percentages of occurrence of each sign for a group of alcoholics and several contrasting clinical groups. These clinical groups include a normal group, a combined psychoneurotic group, a general psychopathic group, and an epileptic group.

The greatest difference is indicated between the alcoholic group and the normal group. A rather close resemblance is shown between the total alcoholic group and the general psychopathic group. Clinically defined subgroups of alcoholics also are compared with non-alcoholic clinical groups of similar type. The most definite similarity is demonstrated between the alcoholic and the non-alcoholic psychoneurotic groups.

Mean normality scores (a specially devised summarizing score) computed for the several alcoholic and non-alcoholic clinical groups are shown to be remarkably similar for comparable psychiatric diagnoses.

Rorschach Record from a Patient after Removal of a Tumor from the Frontal Lobe. *Jessie M. Ostrander, San Diego.*

This is a presentation of the Wechsler-Bellevue and Rorschach records of a man 38 years old, a former teacher, from whose frontal lobes a tumor "the size of a grapefruit" had been removed by surgery.

The W-B IQs were within normal limits. The lowest scores were on arithmetic problems and returning digits. The Rorschach responses showed some of the features previously noted in such cases, also six animal movement responses, pure form response average only 27%, form-level within average limits, and no uncontrolled color or shading texture responses.

The record is compared with those reported by Piotrowski, Tallman and Klopfer in the Rorschach Research Exchange, 1937, and by Harrower-Erickson in the Archives of Neurology and Psychiatry, May, 1940. This case adds to the data on the subject but is insufficient for drawing conclusions about differential diagnosis.

Levels of Aspiration of Hysterics and Neurasthenics. *D. R. Miller, Stanford University* (introduced by Maud Merrill James).

In this study, the Carl Hollow Square and Miles Finger Maze tests were used to obtain levels of aspiration. To insure comparable levels for different individuals, instructions were phrased to keep ego involvement at a maximum, and achievement scores were prearranged.

Criterion classification was based on agreement between clinical diagnosis and either the Rorschach Test or Minnesota Multiphasic Inventory. Patients were classified as conversion hysteria, vegetative neurosis, ward controls, normal controls or mixed cases. Selection was controlled for IQ, sex, age, and ward vs. out-patient categories.

All but one of the conversion hysterics had negative aspiration levels. In only one other group, ward controls, were any negative levels found. The average aspiration level of the vegetative neurosis group was higher than those of all other groups. There was a significant tendency for negative aspiration level to be associated with only children. A theoretical interpretation is offered concerning the relationship of level of aspiration to the type of symptoms developed.

The Use of Hypnosis in the Suppression of Intractable Pain. *Roy M. Dorcus, University of California at Los Angeles,* and *Frank Kirkner, Birmingham Hospital.*

It is well known that hypnosis can be employed for suppressing pain of various kinds. The authors have utilized this method for overcoming two pain-producing conditions which have not been given much attention in the experimental literature. The first of these conditions is pain associated with dysmenorrhea; the second is pain arising from the lower limbs in patients with spinal cord injuries. The immediate reaction of both kinds of patients to the therapy is very favorable. The dysmenorrheic and paraplegic patients react quite differently, however, insofar as the long-term effects are concerned.

A Social Psychological Theory of Hypnosis. *T. R. Sarbin, Los Angeles* (no abstract).

A Reappraisal of Insanity as a Scientific Concept. *D. B. Klein, University of Texas* (no abstract).

Thursday Afternoon, June 19

Session II-A: DEVELOPMENTAL AND SOCIAL

HAROLD F. JONES, *Chairman*

Reaction to "Hiroshima". *Joseph Luft* and *W. M. Wheeler, University of California at Los Angeles* (introduced by George F. J. Lehner).

The New Yorker issue for the week of August 31, 1946, was devoted to an account by John Hersey of the bombing of Hiroshima and how it affected the lives of six people. More than 300 "randomly selected" letters in spontaneous response to "Hiroshima" are studied. Whenever possible the correspondents are characterized in terms of sex, occupation, group identification and place of residence. An attempt is made to relate these factors to the comments abstracted from the letters.

Comments in the letters ranged from the expression of a desire that the story be made available to others and expressions of anxiety and guilt feelings, to a designation of the story as undesirable propaganda and a request that the subscription be cancelled.

The letters then are rated in terms of the approval or diapproval of the article and its publication. The general reaction of the sample population to this use of the atom bomb also is duscussed.

Prospectus of the Make-A-Picture-Story (MAPS) Projective Personality Test. *Edwin S. Shneidman, University of Southern California.*

A new projective personality test, the Make-A-Picture-Story (MAPS), is described. In this test, the subject selects one or more figures (from among 60) and populates social or ambiguous background pictures, one at a time, telling a story of the situation he has created. Figures include men, women, children, animals, silhouettes, legendary figures, minority group figures, etc. Background pictures include a bedroom, a bathroom, a schoolroom, forest, stage, medical office, street scene, cave, bridge, attic, closet, etc.

On the basis of preliminary administrations, it is hypothecated that the MAPS test—by virtue of having another "degree of freedom", i.e., *selecting* the figures as well as enlivening and interpreting them—is flexible and sensitive, possesses intrinsic subject appeal, obtains information on specific problem areas, and lends itself to quantitative treatment on the basis of objectively scorable "signs". Illustrative case data, using the Rorschach, the Thematic Apperception Test, the Minnesota Multiphasic, and the MAPS test are included.

Projections of Men and Women to Items Referring to the Same and the Opposite Sex on a Sentence Completion Test. *George F. J. Lehner, University of California at Los Angeles.*

A specially prepared sentence completion test was utilized, containing stimulus material which would "force" projections to items referring to either members of the same or of the opposite sex. This test consisted of 100 items—50 referring to the male viewpoint and 50 identical to the first but referring to the female viewpoint. These items were presented to 100 men and 100 women. Fifty of the men had no brothers or sisters, 50 had one or more sisters; 50 of the women had no siblings, 50 had one or more brothers.

The data obtained were analyzed to compare the responses of the males (with and without sisters) with those of the females (with and without brothers) to the "male" items and to the "female" items. The male responses to the "male" items then were compared with the male responses to the "female" items, and the different female responses similarly compared. The relationship of the responses of each group to the relevant variables, including the different diagnostic categories to which the items contribute information, is discussed.

Differences in Adolescent Sex Roles as Revealed by Colloquial Speech. *Mary Cover Jones, University of California.*

Comparisons were made of the verbalizations of boys and girls when conversing with the same and with the other sex in a clubhouse center. The language units were classified according to (a) content: appearance, school marks, etc.; (b) attitudes toward self: positive (self-protecting, etc.) and negative (self-abasing, etc.); (c) attitudes toward others: positive (friendly, etc.) and negative (criticizing, etc.); (d) function: to establish social ties, to express aggression, etc.; (e) parts of speech; (f) grammatical usage; (g) figures of speech and (h)

other colorful usages such as punning, rhyming, etc. Type-token ratios were computed to determine the range of vocabulary.

Unlike the sex differences in adult conversation (as reported in the literature) boys as often as girls discussed appearance and apparel, persons and personal attributes. In agreement with studies of young children, boys used "colorful" language (slang, epithets, etc.) more often than did girls. Boys used language for aggressive purposes more than girls, and more frequently the attack was aimed at their own sex.

Parental Attitudes Towards Sex Education. *Berlan Lemon* and *L. F. Beck, University of Oregon.*

Reactions of parents to an experimental sound slidefilm on the subject of human reproduction and growth were found to be generally favorable. More than 95% of parents attending P-TA meetings endorsed the film for showing to their pre-adolescent children.

In order to obtain a broader sample of attitudes towards sex education, a 20-item scale was prepared and administered to parents in groups and by mail in five Oregon communities. It was found that parents who participate in public school functions are significantly more liberal in their views on sex education than parents who stay at home. Spouses, irrespective of age, entertain a similar outlook on sex education. The results as a whole indicate that no less than five to twenty per cent of Oregon parents, depending upon the community, are opposed to sex education in public schools.

Suggestions are offered as to how sex education can be promoted in schools without arousing parental antagonisms towards the teacher or the school administrator.

Session II-B: EXPERIMENTAL AND LEARNING

MILTON METFESSEL, *Chairman*

The Relationship of Verbal Reaction Time to Hemisphere of Entry of a Visual Stimulus. *Margaret Hubbard Jones* and *F. Nowell Jones, Washington State College.*

If the theories of lateral cerebral dominance are correct, then a visual stimulus which first enters the right hemisphere should produce a longer verbal reaction time in right-handed subjects than does a stimulus which first enters the left hemisphere. The reverse should be true in left-handed subjects. In this experiment single letters were presented in the periphery and the subject responded by naming the letter. Four left-handed and three right-handed subjects were used. In all but one subject stimuli in the right visual field produced slightly faster reaction times. There were no systematic differences between right- and left-handed subjects.

An Analysis of the Superiority of Binocular over Monocular Visual Acuity. *Milton W. Horowitz, Stanford University.*

Some of the factors that might conceivably affect visual acuity to render the binocular threshold lower than the monocular are considered both theoretically and experimentally. These include size of pupil, accommodation, convergence, anisocoria, fixation, chance factors, retinal rivalry, and a possible cortical interaction.

Both monocular and binocular data have been secured and have been analyzed by analysis of variance. The results suggest that retinal rivalry and pupil changes can account for much of the difference between monocular and binocular thresholds.

A Factor Analysis of Visibility Data. *F. Nowell Jones, Washington State College.*

A factor analysis using Thurstone's centroid method was performed on the visibility data published by Coblentz and Emerson. Measurements were available at 20 points on the spectrum for 80 S's. The measurements were made under conditions of photopic vision.

After rotation, three orthogonal factors were obtained. One of these accounted for all of the variance at the red end of the spectrum, with negative loadings in the green. A second factor had loadings primarily at the short wave-length end of the spectrum, and a third appeared in the yellow region.

Certain inadequacies in the data, such as lack of enough S's beyond 493*mu*, restrict the interpretation of these results. The presence of negative loadings also requires explanation. Nevertheless, these results are not incompatible with a three-color theory of color vision.

A Technique for Reducing Muscle Action Potentials to Numerical Indices of Tension which Justify Comparisons between Individuals. *Roger B. Loucks, University of Washington.*

A technique is described which makes it possible to compare the amount of tension one individual exerts in carrying out a psychomotor task with the amount of tension another person utilizes in performing the same task. An electrical integrator summates the muscle action potentials representing tension used in performance of a task, and automatically reduces the activity to numerical scores. The numerical indices bear a straight-line relationship to muscular tension as measured on a dynamometer and are independent of the general strength of an individual or the size of his muscles. In measuring the tension exerted by subjects in performing a psychomotor test, the technique yields a reliability of .95. The method would appear to be of value in measuring the effect of drugs, anoxia, fatigue, and physical training on muscular tension.

This technique was developed by the writer in 1942 at the AAF School of Aviation Medicine, Randolph Field, Texas, in connection with research conducted for the AAF Psychological Classification Program. The work is being continued in the Department of Psychology at the University of Washington.

The Effect of Negative Incentives in Serial Learning. III. Fixation Due to an Isolated Verbal Punishment. *G. Raymond Stone, University of Oklahoma.*

Sixty human S's performed in a serial multiple-choice task in which a 39-item list of stimulus words was presented six times at a constant rate. The S's were instructed to respond to each word with some number between 1 and 10, and the E would indicate in many cases whether the response was "right" or "wrong", but for some items no information at all was given after the response. The experimental design incorporated a fixed order of the E's responses, unknown to the S, and thus allowed for the isolation of the effects of any one incentive response.

The questions to be answered by the data analysis are threefold: (1) Will an empirical baseline of repetition be greater than chance expectancy even when the E gives no informative response? (2) Will the informative incentive word "wrong" reduce the number of repetitions to the item to which it is applied below an empirical base? (3) Will the reduction of repetition, if any, to the item called "wrong" be less than a chance value? The answers are relevant to the modern controversy over the negative statement of the law of effect.

The data support an answer of "yes" to question (1), and "no" to questions (2) and (3). The effect of the word "wrong" was to strengthen the S-R to which it was applied.

The Minimum Requirement for Learning a Maze Discrimination. *John P. Seward, University of California at Los Angeles.*

Tolman holds that a rat learns a maze by building up expectations at the choice points. The latent learning experiments indicate that this learning takes place independently of food reward. It follows that to learn a discrimination a rat must make *differential* anticipatory responses at the choice point, and this is all that is required.

To test this hypothesis a single-T alley maze was enclosed in a one-way screen to eliminate extra-maze visual cues. Two pairs of end boxes were used with different groups: in the first pair one box was black and the other white; in the second, both boxes were gray but the floors were of wire and sponge rubber, respectively. Hungry rats were allowed to explore the maze a half hour a day for three days. On the fourth day each rat was placed directly in one end box, fed for one minute, then placed in the start box and permitted to find his way to the food.

Preliminary results suggest that both pairs of end boxes yield successful performance. Control series are planned to discover the essential cues.

The Effect of Cognitive Structure on "Emotional Conditioning" and on Recall. *Ernest A. Haggard, University of California.*

Twelve subjects gave chain associations for 10 seconds to each of 42 stimulus words during three sessions. The list included 13 "rural" words, 13 "urban" words, and six repetitions of a *country—farm*—(shock)—*neutral word* sequence. Six subjects shocked themselves (S-shock), hence knew when the shock was coming, and six were shocked by the experimenter (E-shock), thus didn't antici-

pate the shock. The shock always occurred 10 seconds after *farm* and only during Session 2. After each session the subjects recalled the stimulus words. Between Sessions 2 and 3 all subjects learned the list to 85% recall.

During Sessions 2 and 3, (a) the E-shock subjects showed larger average GSRs to all words during both sessions, except to *farm* during Session 3, where the S-shock subjects showed significantly larger GSRs; (b) the subjects showing larger GSRs generally recalled more words; (c) both groups showed a marked drop in recall of neutral words following the shock; and (d) the S-shock subjects recalled relatively fewer "rural" words after Session 2 than did the E-shock subjects. Thus cognitive structure tended to focalize "emotional conditioning" and loss of recall to aspects of the situation closely related to the shock.

Friday Morning, June 20

Session III-A: APPLIED

ROGER B. LOUCKS, *Chairman*

National and Regional Programs of the Social Science Research Council, as Related to Psychology. *Harold E. Jones, University of California.*

Representing psychology and five other social science disciplines, the Council provides a means for interdisciplinary cooperation in the social sciences and also, through an inter-council organization, for associated activities with the natural sciences, education, and the humanities. The Council conducts specific research projects, awards fellowships and grants-in-aid, and supports committees for research planning and evaluation. Activities on the Pacific Coast are, in part, administered through a regional officer of the Council. Current activities of special interest to psychologists are reviewed and summarized.

Interaction between Physical and Human Variables in the Design of Equipment for Optimal Use. *Harry Helson, Bryn Mawr College.*

Evaluation of equipment in terms of optimal use received new impetus during the war. Formerly the man was especially selected for the machine or trained for specific tasks. Wartime research showed that accuracy and performance can be greatly improved, also learning time and individual differences greatly reduced, through improved design of equipment.

Three hypotheses are presented which served as heuristic principles in research: (1) there is an optimal range for physical variables yielding optimal performance; (2) performance depends upon operator tolerance determined by external as well as internal factors; (3) optimal values of a physical variable tend to be optimal when interacting with other variables—law of transfer of optimal range. Handwheel speed, diameter, inertia, friction, aiding time constant, and visual factors are discussed. Optimal performance depends upon interaction of human and physical variables, the latter needing much investigation. This study indicates the psychologist should be coordinate with the engineer in designing equipment for human use and sheds new light on sensori-motor performances.

Accident Proneness among Street Car Motormen and Motor Coach Operators. *Clarence W. Brown, University of California.*

The term "accident proneness" is used with several different meanings. When used to describe a general tendency of the individual to have accidents, the concept of accident proneness can be scientifically evaluated. A study of the interrelationships among different types of accidents incurred by groups of street car motormen and motor coach operators verifies previous findings that any tendency of the individual to retain liability to have accidents under different circumstances is of very minor importance.

An Optometric Aptitude Test. *A. A. Canfield* and *Neil D. Warren, University of Southern California.*

On the basis of a job analysis and a careful evaluation of the course of study at an optometry school, a five-part aptitude test was constructed. Besides the factors of mathematical ability and general intellectual ability, an attempt was made to evaluate the person from the standpoint of clerical aptitude, persistence of attention, carefulness to work habits, and past history.

The test was administered to the junior and senior classes at the Los Angeles School of Optometry and inter-correlations between scores on the test and grades in school were computed. To see if this test was unique, the three sections chosen for final use in the selection battery (clerical aptitude,

mathematical ability, and general reasoning and verbal ability) were correlated with students' entrance examination scores in the University of Southern California.

Relatively high validities were found in the first administration. The correlation between the test as a whole and school grades was .68. Due to the relatively small size of the sample the standard error of she coefficient was about .10.

Personality and Character Requirements vs. Job Level as Shown by Civil Service Job Announcements. *Robert F. Utter, University of California at Los Angeles* (introduced by Roy M. Dorcus).

Four hundred twenty-five published job announcements of a large civil service agency for the year 1941–43 were analyzed to determine the relation of job level to personality and character requirements. The jobs were divided into four classes: unskilled, semi-skilled, skilled and professional. Percentage figures for the separate "traits" by job level showed no consistent relationship between skills and character requirements demanded.

A Summary of the Validity Coefficients of Certain Employment Tests. *Edwin E. Ghiselli, University of California.*

Approximately 700 validity coefficients for some 20 different tests are summarized. In all instances the criterion used in validation was some index reflecting productivity, or supervisors' ratings. The coefficients employed were collected both from published and unpublished sources. The median validity coefficients of the various tests are presented for different occupational groups.

A Study of the Intra-individual Relationships between Interest and Ability. *S. M. Wesley, Barbara Stewart* and *Douglas Corey, University of Southern California.*

An important question from the vocational guidance standpoint is: Does the individual tend to show relatively stronger interest in those areas where his ability is *relatively* greater than in areas where his ability is less (using his own general level of both interest and ability as the base from which these measurements are taken)?

This study is based upon more than 125 cases, all of whom were given the Kuder Preference Record and one or more ability test in each interest area covered by the Kuder, except for the Persuasive and Social Service areas. The Army Alpha Examination, First Nebraska Revision and the Minnesota Multiphasic Personality Inventory also were administered. Results are presented in terms of rank order correlation coefficients and over-all correlations between interest and ability within each of the seven interest-ability areas studied. These correlations are based upon measures of interest and ability expressed in terms of deviations for each individual subject from his own general level in each area. The results of a comparison of the personality characteristics of subjects with a high congruence of interest and ability with those of subjects who have a low congruence are given.

Clinical Use of the Altus Adjustment Test in Screening Army AWOL's. *Jerry H. Clark, Veterans Administration Guidance Center, Santa Barbara.*

The Altus 36-point Adjustment Test was given to a random sample of 100 Army AWOL's who also were given the Wechsler Mental Ability Scale, Form B, and the Minnesota Multiphasic Personality Inventory. The correlations of the adjustment questions with the Wechsler subtests were generally insignificant. The correlations with the MMPI were, however, quite high: with the Hs Scale, .82; Hy, .83. Twelve of the 36 items in the adjustment test were almost as good as the total test; these 12 items had been validated as measures of hypochondria and hysteria. The r's of these 12 items (which took only about one minute to administer orally) with the "neurotic triad" of the MMPI were 80 with Hs, .78 with D, and .86 with Hy.

The tentative conclusions are (1) that orally administered adjustment tests have validity, (2) that civilian agencies could profitably use the 12 adjustment points for selecting those with putative neurotic tendencies for further screening and study by longer and more refined measures like the Rorschach, MMPI, TAT and personal interview.

Age and Hand Strength. *M. Bruce Fisher, Fresno State College,* and *James E. Birren, Northwestern University.*

Measurements of hand strength were made on 988 naval and industrial personnel by a test procedure requiring increasing levels of work output. In a group of 552 male manual workers in one industry, who ranged in age from 18 to 68, the maximum

strength was in the middle twenties, with a drop to 84% of the maximum at age 60. Standard deviations were 10 to 15% of the mean at each age level.

These findings are compared with other data on strength measures and are discussed in the light of a statistical evaluation of sampling bias in a similar "cross-sectional" study of ability change with age.

Session III-B: ATTITUDES

D. B. KLEIN, *Chairman*

An Approach to the Theory and Measurement of Ethnocentrism. *Daniel J. Levinson, University of California.*[1]

An Ethnocentrism (E) scale was constructed containing three subscales dealing with Negroes, other minorities and patriotism. A previously developed Antisemitism scale also was given. The reliability of the E scale was .91; other statistical properties were equally satisfactory. The correlation of .8 between ethnocentrism and antisemitism suggests that antisemitism is one facet of general ethnocentrism. Scales of political-economic conservatism and of moralism-conventionalism each correlate .5 with the E scale. These relationships are interpreted in the light of a distinction between the pseudo and the genuine in respect to conservatism, moralism, and patriotism.

The following concept emerges: Ethnocentrism is based on a pervasive and rigid ingroup-outgroup distinction; it involves stereotyped negative imagery and hostile attitudes regarding outgroups; positive imagery and submissive attitudes regarding ingroups, and a hierarchical, authoritarian view of group interaction in which ingroups are rightly dominant, outgroups subordinate.

The Measurement of Implicit Antidemocratic Trends. *R. Nevitt Sanford, University of California.*[2]

The aim was to construct an instrument which, without appearing to deal with race prejudice or fascism, would measure receptivity to antidemocratic propaganda and predict scores on an ethnocentrism scale. The following central dispositions within the prejudiced person were conceived of: conventionalism, authoritarian submission, authoritarian aggression, anti-intraception, superstition and stereotypy, power and "toughness", destructiveness and cynicism, projectivity, disapproval of sex. Items pertaining to these variables were included in the 30-item "scale". Each item was a statement of attitude or opinion in such non-ideological areas as the self, the family, people in general, sex, etc. After two revisions, the scale was administered to 1,518 men and women in 14 groups representing various walks of life.

The average reliability coefficient was .90, the average correlation with the California Ethnocentrism Scale, .75. These results give evidence of the functional role of personality trends in organizing surface attitudes, opinions and values.

A Method of Scoring Interviews of Prejudiced vs. Unprejudiced Subjects. *Else Frenkel-Brunswik, University of California.*[3]

An attempt was made to score clinical interviews from subjects extremely high and extremely low on ethnic prejudice. The scoring categories represented specific hypotheses rather than a more generalized approach to personality. "Blind" scoring by raters unfamiliar with the ideologies of the subjects revealed most of the approximately hundred categories as discriminatory.

Whereas the unprejudiced seem capable of overtly verbalizing mild aggression toward parents and family, combined with genuine affection, the prejudiced hide strong resentments and feelings of victimization behind overt glorification and submission, and cover underlying disrespect and hostility toward the opposite sex by pseudo-admiration. Social relations of the prejudiced tend toward an exploitive, power-oriented (as contrasted with a more love-seeking) attitude. Non-acceptance of negative traits in themselves and the ingroup tend to accompany signs of ridigity and narrowness of the ego, intolerance of ambiguity, pseudo-scientific thinking, and an anti-intraceptive attitude. An attempt was made to counterbalance, by considerations of reliability and validity, the deliberate complexity and inferential character of the scoring categories.

1, 2, 3 The papers by Levinson, Sanford and Frenkel-Brunswik deal with several aspects of a research project on social discrimination, sponsored by the American Jewish Committee and carried out by the University of California Public Opinion Study and the Institute of Social Research. The entire project will be reported in full elsewhere by T. W. Adorno, Else Frenkel-Brunswik, D. J. Levinson and R. N. Sanford.

The Differential Ordering of Minority Groups on Five Aspects of Prejudice. *Donald T. Campbell, University of California.*

Scales were prepared to measure five specific aspects of prejudice: "Social Distance", "Blaming" "Affection", and ideas regarding the "Capability" and "Morality" of the outgroup. Attitudes in these modalities were measured toward five minority groups: Negro, Japanese, Jewish, Mexican and English. While the study focused chiefly on the pattern of highest intercorrelation among the 25 specific scales thus created, this paper deals only with the different rankings given the outgroups on the five attitudes.

In a preliminary sample of 150 subjects, each of the five attitude modalities gave preference orders unique to a greater or less extent. To take an extreme example, the minority group most blamed also is seen as the most capable. Tentative conclusions are: (1) Insofar as tested by the ordering of outgroups on these modalities, "prejudice" is not a completely homogeneous entity. There is, however, a strong common component. (2) No single modality is adequate to determine which group is the object of the most "prejudice". (3) The construction of meaningfully comparable tests of "prejudice" will be difficult.

An Exploratory Study of the Psychodynamics Underlying Racial Attitudes. *Arthur Globe, University of Southern California* (introduced by G. H. Seward).

The problem was to determine the psychodynamic factors underlying racial attitudes. For preliminary sorting, a modification of Bogardus' Social Distance Scale was administered to a group of 200 male veterans attending classes at the University of Southern California. From the distribution thus obtained, the upper and lower 10%, representing the liberal and reactionary extremes in attitude, were selected for intensive study. The Adorno-Brown modification of the Rosenzweig Picture Frustration Test was used in conjunction with an interview as a means of exploring the psychodynamic factors differentiating the extreme attitudes. Preliminary examination of the data suggests that the chief factors responsible for the differences in racial attitudes between the extreme groups are to be found in early familial influences.

Psychodynamics of the Attitudes of Ex-service Men Toward Feminism. *Robert Lilly, University of Southern California* (introduced by G. H. Seward).

To obtain extreme belief patterns from a group of 200 men in beginning psychology classes, Kirkpatrick's Belief Pattern Scale for Measuring Attitudes Toward Feminism was used. This scale contains 40 patriarchal items, 40 liberal or feminist items meaning male-female equality, and a bio-data sheet. To get at the deeper feelings, a series of eight male-female situations were set up whereby the subject projected an answer to a statement by the female. A "performance" was obtained, and then an "inquiry" followed to determine reasons for the subject's projection.

The distribution on the Kirkpatrick Scale was bell-shaped with a range from quite patriarchal beliefs to very liberal, but with most of the men showing dichotomous attitudes. However, the sample did lean to the liberal side. Whether or not these subjects were just giving lip service but felt otherwise should be revealed by the projections. So far a pilot study with the projection technique brought out dominance-submission factors.

Ethnocentrism and Humor Appreciation. *Joseph Adelson, University of California.*

One hundred and ten college students were rated on the California Ethnocentrism Scale. They then were asked to rate 25 jokes, dealing with five humor themes, on a nine-point scale. Ethnocentric men rated sex jokes and jokes ridiculing physical defects higher than did non-ethnocentric men. Prejudiced women rated jokes about stinginess higher than did non-prejudiced women. These differences were reliable at the 2% level or above. No differences were found for "shaggy-dog" jokes or for jokes ridiculing authority figures. Bob Hope was the favorite radio comedian of the ethnocentric men and women.

The results of the study tend to support a theory of specific personality differences between prejudiced and non-prejudiced individuals.

Ethnocentrism and a General Mental Rigidity Factor—A Further Experiment. *Milton Rokeach, University of California.*

Previous experiments with an arithemetical tech-

nique provided strong evidence that the mental rigidity characteristic of ethnocentric individuals manifests itself also in solving non-social problems. Measures of concrete thinking also were significantly associated with ethnocentrism. In a parallel experiment, the hypothesis was tested by another non-social, non-arithmetical technique. To establish a set, five simple maps, identical except for street names, were presented for 15 seconds each. After each map was presented the subject described how to go from the southwest corner to the northeast corner. Then followed five critical problems, identical with the previous problems except that diagonal short-cuts were possible. Concrete thinking was measured by verbalization and the use of scratch paper. Twenty-three high- and 23 low-prejudiced subjects (upper and lower half) were selected by the California Ethnocentrism Scale. The per cent rigid solutions to the five critical problems were 43, 39, 22, 22, 22 for the highs; 17, 17, 17, 13, 4 for the lows. On all problems those scoring high on ethnocentrism verbalized more than those scoring low. Scratch paper showed no consistent differences. A theory of the causes of general rigidity is presented.

Friday Afternoon, June 20

Session IV-A: EDUCATIONAL AND CLINICAL

H. C. STEINMETZ, *Chairman*

The Clinical Program of the California Youth Authority. *Burton M. Castner, State of California.*

The Youth Authority, a state agency with jurisdiction over offenders under 21 committed to it by the courts, bases its programs of training, treatment, and parole as far as possible upon clinical findings and recommendations. The Division of Diagnosis and Classification comprises, besides the Chief of the Division, a staff of five Senior Clinical Psychologists, with consulting psychiatric service available. Two training schools also have full-time staff Psychologists. Most youths committed now receive psychological study and observation for several weeks before later disposition is determined. Therapy is provided for a limited number of cases which will be increased as the program expands. Plans call for the earliest possible establishment of two Reception Centers, with enlarged clerical staffs, to provide every youth with psychological, psychiatric, medical, and other studies prior to assignment to any training or custodial institution. The Research and Statistics Section of the Authority, through its card-punching system, cooperates in making social and psychological data available.

The Autobiographical Questionnaire as an Instrument in Clinical Interviewing. *J. Gustav White and R. W. Dutcher, Los Angeles.*

The autobiographical questionnaire described was found to have the following characteristics:

Objections: (a) It is not a self-inventory, but covers information areas only. (b) It is time-consuming to fill out and requires too much writing. (c) Rapport must be established *prior* to filling out the blank. (d) One form does not meet the individual differences of various clients and agencies.

Advantages: (a) The counselor obtains a great deal of pertinent information with a minimum of personal effort and time. (b) Clients normally give more information than would be elicited otherwise, realizing that counseling aid is proportionate to information given. (c) Clients gain insight in the processs. (d) The device gives the client opportunity to express himself subjectively while tests give more objective data. (e) Special adaptation of pertinent data for each counseling interview is possible.

This instrument has been used widely for nine years in its present form, but now is undergoing revision to make it more adaptable to a wider variety of situations such as paid clientele, collegiate or secondary grade levels, social agency clients, veterans, church groups, vocational rehabilitation trainees, etc.

The Rorschach as a Differential Predictor of Academic Success for Matched Groups of Highly Superior Men. *Boyd R. McCandless, San Francisco State College.*

Two groups of highly superior men enrolled in a Maritime Service Officers School were matched on the basis of General Classification Test score, age, education, mechanical comprehension, reading comprehension and math. The first group had an academic average for the intensive four-month training program of straight A's; the second group averaged low C's and D's and were nearly disqual-

ified for academic failure. Individually administered Rorschach tests were investigated for differences which might explain this great performance discrepancy.

There were no significant differences, although the high grade-point men tended to show less fluidity and strength of emotion, and indicated more anxiety in some areas than did the low grade-point men. They also paid slightly less attention to the blots as a whole and more to the large, common and the small, uncommon details, and had more popular responses. Beck's "organization score" made a negative discrimination (the low grade-point men were higher, although not significantly).

Non-Intellective Factors and Grades: The Group Rorschach. *Grace M. Thompson, University of California* (introduced by W. D. Altus).

The group Rorschach was administered to 128 students of general psychology. The records were scored mainly by Beck's system, though Klopfer's *FM* and *m* (animal movement, inanimate movement) also were used. Fifty-two types of data from each record were item analyzed in terms of semester grades and verbal aptitude test scores. Thirty-four of the 52 items eventually were combined into a quantitative score which yielded a Pearson product-moment coefficient of correlation of .52 with psychology grades. The 36 best items, in terms of aptitude score item analysis, gave an *r* of .51 with verbal aptitude test scores. Twenty of the 52 items correlated .38 with grades, .04 with aptitude. The aptitude test correlated .66 with semester grades; when the 20 "non-intellective" items were combined with aptitude for grade prediction, the resultant coefficient of multiple correlation was .74. These non-intellective Rorschach factors may be considered a partial index to motivation, if motivation is defined as the tendency to excel in grades when aptitude is held constant.

Non-Intellective Factors and Grades: Study Habit and Adjustment Tests. *William D. Altus, Santa Barbara College.*

An adjustment test, constructed by the writer, and a study habit inventory were administered to 138 students of elementary psychology. Both tests were item analyzed in terms of a verbal aptitude test and semester grades in psychology. Thirty-seven items were selected which had either zero or negative correlation with aptitude but positive correlation with grades. The resulting Pearson product-moment coefficient of correlation with grades was .34; with verbal aptitude the *r* was negative, −.05. The adjustment test, with items relating to food aversions, disgusts, activity preferences, controlled associations, etc., correlated .21 with grades and −.30 with aptitude. The aptitude test yielded a coefficient of .60 with semester grades. When all three tests were combined into a multiple coefficient of correlation, the *r* was .76.

Eventually it may be possible to isolate a combination of adjustment items, study habit items, and data from the group Rorschach which will yield grade-correlational data as high as that now found through aptitude tests. If such tests, when isolated, can be kept truly non-intellective, a large step will have been taken in grade prediction and in the measurement of a specific type of motivation.

Private Clinicians in Los Angeles: A Study in Quackery. *Edward J. Shoben, Jr., University of Southern California.*

A questionnaire relating to background and services was distributed under a disguising cover letter to 88 self-styled clinical psychologists in Los Angeles. Forty replies were received, with additional data obtained through telephone contact on 13.

The material on training was evaluated against the suggestions of the Shakow report (David Shakow *et al.*, "Graduate Internship Training in Psychology," *J. Consult. Psychol.*, 1945, 9: 243–266), and only three respondents measured up to recommended standards. Twenty per cent of those replying had no college degree; two others had high school plus chiropractic college, and one, high school plus osteopathic training.

In terms of services offered, there was no relationship between the scope of clinical abilities claimed and background factors. Thirty-eight claimed to do counseling and psychotherapy, using techniques that ran from "common horse sense" through "spiritual philosophy" to "hypnosis" and "psychoanalysis". Seven listed themselves as speech correctionists, whereas only one reported specialized training in this area. The mean fee was $9.00 per hour.

Dimensions of the Counseling Process. *Edward S. Bordin, Washington State College.*

Terms used in discussing counseling methodology are largely hortatory in implication. The juxtapositions of "directive"—"non-directive", "couselor-centered"—"client-centered", and "undemocratic"—"democratic", in discussions of issues in counseling only confuse the analysis and imply a pre-judgment of the questions. No counselor wants to admit that he is "directive", implying that he does not respect the integrity of the individual or "counselor-centered", implying that he is more concerned with his own need than the client's, and certainly he does not want to be called "undemocratic" or authoritarian.

The issues need to be re-phrased in non-ethical terms—operational terms which may lead to definitive studies and place them before counselors on a non-threatening basis. Three types of variation in counseling methods are analyzed: (1) In degree of responsibility ceded to the client; (2) In degree of responsiveness to the attitudes as compared to intellectual content in client expression; (3) In methods of handling client attitudes ranging from reasoning to facilitating client expression and manipulation of his own attitudes.

A Preliminary Report of an Evaluation of the Veterans Administration Counseling Service in the University of Oregon. *John R. Ward* and *Leona E. Tyler, University of Oregon.*

Sixty non-selected veterans who had received Veterans Administration counseling prior to January, 1947, were matched with an equal number of non-counseled veterans. None of the included veterans had service-connected disabilities, and all were entering freshmen. The matching was done on the basis of age, Ohio Psychological Test scores, and school (Liberal Arts, Education, etc.).

Winter term grade point averages for both groups were computed. While the counseled veterans had a slightly higher mean grade point average, the critical ratio was found to be only 1.19 (probability = .24) which is not statistically significant. A special scale was constructed in an attempt to measure the adjustment of the two groups to the college situation. The counseled veteran's mean score was slightly higher (higher scores indicating poorer adjustment as measured by the scale). However, the difference was not statistically significant (critical ratio = .30).

The large majority of counseled veterans believed that other entering freshmen would profit from the counseling.

Session IV-B: TEST ANALYSIS

H. R. TAYLOR, *Chairman*

An Investigation of the Influence of Preceding Items on Subsequent Items in a Questionnaire. *George E. Mount, University of California at Los Angeles.*

A question concerning the dependence of the predictive value of test items on position in the test arose in connection with the standardization of an interest questionnaire for industrial selection. A further question arose concerning the possibility of deriving new forms of the test from items constructed as logically similar to significant items on the original form.

An interest questionnaire was administered to a preliminary sample group to locate items showing a significant relation to the criterion. Half of these items were left in the original position along with the non-significant items. Non-significant items were deleted from the remainder of the questionnaire. This shortened the test by about one-third, and the revised form was expanded by including new items logically related to those previously found significant. The revised questionnaire was administered to a new sample group to determine the predictive value of the three new sets of items. Results are discussed.

Manipulations of the Units of a Ratio Scale as Comparative Judgments. *Milton Metfessel, University of Southern California.*

A method combining ranking and rating is proposed for practical and theoretical problems of psychology. The operations of the method are as follows: (1) The subject is requested to rank in order on any prescribed dimension a given number of items, and (2) he is given 100 units (pennies, chips, or marks on paper) with the instruction to assign all the units to the items so as to express his judgment of how much more or less one item is than another or all others on the stated dimension. Or, he may be asked to report his judgments of ratios between the items. The advantages and limitations of the proposed method and the relationships

to psychophysical, ranking, rating and paired comparisons methods are discussed. It is recalled that the scale of cardinal number is a ratio scale, and the principle of the method involves a direct or symbolic manipulation of the units of the scale of cardinal number in reporting comparative judgments.

Relationships of the Hildreth Feeling and Attitude Scales to the Minnesota Multiphasic Personality Inventory. *Edward L. Hunt* and *George F. J. Lehner, University of California at Los Angeles.*

The Hildreth Feeling and Attitude Scales, based on an adaptation of the Thurstone attitude-measuring technique were designed for clinical and research use to quickly measure current "feeling states". The scales are composed of eight subscales, four comprising the Feeling and four the Attitude Scales. Hildreth reports data on the use of the scale with a group of male patients, normal and neurotics, in a military hospital.

The purpose of the present research is to study the relationship of the F-A Scales to the MMPI in a group of normal male and female subjects. The data obtained on the F-A Scales and its interrelationships with ratings on various MMPI Scales are presented.

A Study of the Diagnostic Utility of the Minnesota Multiphasic Personality Inventory. *Howard F. Hunt, William A. Cass, Jr., Abraham Carp,* and *Clarence L. Winder, Stanford University.*

This study was designed to determine the utility of the Minnesota Multiphasic Personality Inventory in differentiating between psychosis and psychoneurosis among male neuropsychiatric patients. This diagnostic differential is frequently requested and, because of its implications for ego strength and regression, is often an important consideration in management and therapy.

All sufficiently cooperative patients entering the hospital between November 1, 1946, and April 5, 1947, were routinely tested with the MMPI. Of these, 141 patients produced profiles which were valid according to the usual criteria. These records were filed and did not contribute to the hospital diagnoses.

The valid profiles were sorted by the authors into diagnostic classes as defined objectively in published literature on the MMPI. The results of this sorting were compared with the independent criterion of official hospital diagnosis. The statistical significance of these comparisons also is presented.

A Factorial Study of Achievement in West Point Courses. *Andrew L. Comrey, University of Southern California* (introduced by J. P. Guilford).

A centroid factor analysis was performed upon a matrix of intercorrelations including 12 paper-and-pencil tests, one psychomotor test, grades in seven West Point courses of study, and a variable made up of ratings of West Point cadets by their buddies and officers.

Eight factors were extracted and their axes rotated to psychological meaningful positions. The factors were named as follows: (1) a Halo factor, common to all measures of school achievement; (2) a mechanical experience factor involving prior experience with machinery; (3) a perceptual speed factor; (4) a reasoning factor; (5) a verbal factor; (6) a number factor; (7) a spatial factor, and (8) a pilot interest factor, defined by a biographical data test scored for pilot selection.

Analysis of the factor pattern and the correlations between factors revealed that school achievement in West Point was dependent to a large extent upon a subjective element common to all the grades and ratings, which was designated as the Halo factor. Verbal, numerical, and reasoning abilities also appeared to be of importance. Two courses of a military nature involved mechanical experience in addition to those abilities which appeared in the academic courses and the Halo factor.

An Investigation of the Contributions of Factors to Tests and to their Predictive Value in Two Army Air Forces Pilot Populations. *William B. Michael, University of Southern California.*

The purpose of the investigation was to determine the influence of two pilot populations (815 West Point cadets and 356 Negro cadets) upon the factor composition of two comparable test-batteries, of a pass-fail criterion in pilot training, and upon the prediction of criterion scores and factor scores from optimally weighted tests. A major objective was to relate the traditional multiple-regression techniques in the investigation of test validity to the

newer approaches made possible by the Thurstone system of factor analysis. Following rotation, eight factors for the West Point group were identified as mechanical experience, number, pilot interest, psychomotor coordination, perceptual speed, reasoning, spatial relations, and verbality. For the Negro group, variance in seven of these eight factors appeared, and an eighth factor identified as *kinesthesis* emerged.

For West Point Cadets the three most valid factors in the prediction of pilot success were pilot interest, psychomotor coordination, and spatial relations; for Negroes, kinesthesis, perceptual speed, and spatial relations. Intellectual factors of number, reasoning, and verbality were not valid for either group.

A Factorial Study of Fluency. *Benjamin Fruchter, University of Southern California.*

During the war interest was aroused in the effect of fluency on reaching correct solutions to judgment problems connected with military flying. Thurstone previously had identified a Word-fluency factor. It seemed possible that other fluency factors might be identified from Thurstone's data, since not all of his axes had been rotated to positions of simple structure and positive manifold, and some of his factors were not identified.

A sub-battery of 20 tests was selected from Thurstone's Primary Mental Abilities Battery, and eight new centroid factors were extracted. After rotation, six factors were identified with reasonable confidence. They are Verbal, Spatial-relations, Visualization, Reasoning, Perceptual, and Word fluency. Two factors were less well identified—one interpreted as a "Speed-of-association" factor.

The major conclusions are: (1) Two, possibly three, types of verbal fluency can be identified. (2) A universal fluency factor, common to both verbal and non-verbal tests, did not appear. (3) Separate spatial and visualization factors can be brought out from Thurstone's data.

A Factor Analysis of the Bernreuter Personality Inventory. *Glenn C. Martin, Los Angeles City College.*

This analysis was undertaken in an effort to reduce scoring on the Bernreuter Inventory to a practicable compass, and incidentally to verify Flanagan's analysis of the intercorrelation data. The material is the matrix, including the two Flanagan scales, published in the 1935 manual; the method is Thurstone's centroid solution.

Three extractions were made, yielding high factor loadings: on scales B 1-N, B 3-I and F 1-C for Factor I, B 2-S and F 2-S for Factor II, and rather low loadings for B 3-I, B 4-D and F 2-S for a possible Factor III. Considering reliability, purity and independence of each scale it is deemed feasible to use F 1-C as representative of Factor I and F 2-S for Factor II. Identification of these factors depends on the manual descriptions of the scales carrying the heavy loadings, which suggest "neurotic introversion" for Factor I and "sociability" for Factor II. The analysis of variance shows that 84% of the effective measurement of the Inventory can be described in these terms. However, the validity of these titles in turn depends upon correlation with previously validated tests—not too convincing evidence. Comparison with the Flanagan results using the Hotelling method shows rather striking agreement, lessening the probability that statistical artifacts are being created. The Bernreuter weights are used, rather than the simplified Bennett values, to preserve discrimination gained thereby.

PROCEEDINGS OF THE NINETEENTH ANNUAL MEETING OF THE MIDWESTERN PSYCHOLOGICAL ASSOCIATION

CLAUDE E. BUXTON, *Secretary-Treasurer*

Northwestern University

THE Midwestern Psychological Association held its nineteenth annual meeting at the Edgewater Beach Hotel in Chicago on May 2 and 3, 1947. The program was arranged by a committee consisting of Harry F. Harlow and Agnes A. Sharp. Local arrangements were made by the Chicago Psychological Club, with Edvin Brye, Ruth Wyatt, Grace B. Thiesen and George Speer serving as committee chairmen. Members, guests and applicants for membership in attendance totalled 735.

The program included 75 papers, arranged in 10 sections, and four symposia. The symposium topics and participants were: "Problems and Trends in Veteran and Non-veteran Counseling at the College Level," Fred McKinney (chairman), John Darley, Wilma Donahue, William Gilbert, Hyman Meltzer, E. H. Porter, Jr.; "Problems and Trends in Industrial Psychology as a Profession," Harold C. Taylor (chairman), Orlo L. Crissey, Perry L. Rohrer, Joseph Tiffin, Richard S. Uhrbrock; "Experimental Approaches to Personality," Ann Magaret (chairman), Chester W. Darrow, Sol Garfield, Calvin S. Hall, Julian B. Rotter, Helen Sargent; "Experimental Social Psychology," Rensis Likert (chairman), Angus Campbell, Sebastian De Grazia, Maurice Janowitz.

On Friday afternoon Dael Wolfle delivered the presidential address under the title, "Sensible Organization of Courses in Psychology." The address was preceded by a social hour. On Friday evening the annual business meeting was held. Among the items of business transacted were the following: the program committee for the 1948 meeting was instructed to prepare and distribute with the call for papers a set of criteria according to which the program committee will judge papers submitted to them; the date of assumption of office by the incoming president and council member was moved forward from October 1 to the close of the annual meeting; the Association agreed to give $25 toward the support of the Inter-Society Committee for a National Science Foundation; Dael Wolfle was elected the Association's representative to the Council of the A.A.A.S. for a five-year term; dues were raised to $1.50 per year.

Officers elected were: President, Harry F. Harlow (1947–48), member of Executive Council, Robert R. Sears (1947–50). The association accepted the invitation of the University of Minnesota to hold its 1948 meeting in St. Paul on May 7–8, 1948.

The following 126 persons were elected to membership:

Anderson, Gladys Lowe
Asher, E. J.
Astrachan, Myrtle
Baden, Sam
Baldwin, Alfred L.
Barnard, Maryline
Barry, John R.
Beier, Delton
Benton, Arthur L.
Bischof, Ledford
Bouman, Harry D.
Brookhart, Maurice E.
Browne, C. G.
Brown, Judson S.
Brye, Edvin
Bugental, James F.
Buller, Francis P.
Cable, Julia L.
Cattell, Raymond B.
Challman, Robert
Davidoff, Melvin D.
Davis, Dwight D.W.
Delp, Harold A.
DeMand, John W.
Dennis, Wayne
Denny, M. Ray
Diserens, Charles M.
DuBois, Philip H.
Dunn, Michael B.
Ehrenfreund, David
Elste, Ellen
Ellson, Douglas G.
Evans, Chester
Fairbairn, Margaret E.
Fiske, Donald W.
Fitts, Paul M.
Fletcher, Frank M., Jr.
Forster, Max H.
Fassett, Katherine K.
Franklin, Joseph C.
French, Elizabeth G.
Freymann, Grace Marie

Gellman, William
Gerken, Clayton d'A.
Gibb, Jack R.
Goertzel, Victor
Goodbar, Suzanne B.
Gordon, Donald
Gough, Harrison G.
Gourevitch, Victor
Graebner, Oliver E.
Grether, Walter F.
Grice, G. Robert
Hake, Harold
Hamlette, Iona C.
Harsh, Charles M.
Harvey, Jean
Hilkevitch, Rhea R.
Hill, Harris
Hobbs, Walter R., Jr.
Hobson, Robert
Holt, Robert R.
Hornseth, John
Horrocks, John E.
Humes, John F.
Jackson, Boyd
Jenkins, Mildred E.
John, Elmer
Jones, Marshall R.
Kalhorn, Joan
Kelly, George A.
Knauft, Edwin B.
Kryter, Karl
Kuenne, Margaret
Langford, Roy C.
Lauer, A. R.
Lichte, William H.
Littman, Richard A.
Long, William F.
MacCorquodale, Kenneth
Macduff, Mary M.
Maves, V. W.
McClelland, Wm. A.
McGinnis, John
McIntyre, Sherwood C.
Mellenbruch, Parl L.
Mensh, Ivan
Mitchell, Mildred B.
Morrow, Mary Adele
Mote, Frederick
Osterberg, Wesley
Pattie, Frank A.
Phelps, Harold R.
Price, Mary Alice
Rector, Alice P.
Ringgold, Arlene
Riopelle, Arthur J.
Ripper, C. Harold
Robinson, Mary F.
Rosen, Hjalmar
Rotter, Julian B.
Schrickel, Harry G.
Schumacher, Audrey
Sears, Richard
Seeck, George
Shakow, David
Shuman, Helen
Simos, Irving
Siple, Howard L.
Smith, Anthony
Stavrianos, Bertha
Strother, George B.
Swan, Robert D.
Thalman, Wellington A.
Thomas, Wm. F.
Thune, Leland E.
Todd, J. Edward
Van Dusen, A. C.
Weaver, Benjamin H.
Weider, Mrs. Arthur
Wexler, Milton
Wiener, Daniel N.
Wilkins, Walter L.
Williams, Meyer
Wittig, Ruth B.
Young, Marguerite

PROGRAM

Friday, May 2, 9:00 A.M.

SECTION A. NORMAN CAMERON, *Chairman*

A Trial Coordination of Formal Testing and Therapy in a Child Guidance Clinic. *Newell T. Smalzried, Brush Foundation.*

Psychologists in a child guidance clinic try to discover whether their contribution will be more useful if they minimize formalized testing and increase the formal, observational aspects of their function. To do this, an uncompleted intelligence test is used for those children who are at least of average I.Q. range but not genius; i.e., a range of 100 to 130.

Personality Profiles of Psychoneurotics before and after Treatment. *Helen Shacter, Veterans Rehabilitation Center, Chicago.*

Minnesota Multiphasic Personality Inventory profiles were obtained for a group of hospitalized psychoneurotic veterans. Successive test administrations were 1) upon admission 2) when ready for discharge, and 3) again several months after normal work activity had been resumed. Comparative graphs show general consistency of patterning, and in a majority of cases maintenance of adequate adjustment.

A Proposed Classification of Fundamental Psychotic Behavior Reactions. *Mary Phyllis Wittman, Elgin State Hospital.*

A classificational schema for what appear to be three fundamental types of psychotic behavior reaction and the rationale for such a schema. The behavior reactions are described in numerical terms giving the relative weighting for each of the three components. The classification readily lends itself to research and to statistical analysis of results.

Sex Differences in Doll Play Aggression. *Pauline Snedden Sears and Margaret Holding Pintler, University of Iowa.*

Analysis of the *direction* and *content* of phantasy aggression appearing in the doll play of young children shows distinct sex patterning. Girls place the girl and baby dolls relatively frequently in situations where they are recipients of aggression, while boys put the father doll most often on the receiving end.

A Combined Projective and Psychogalvanic Response Technique for Investigating Certain Affective Processes. *Homer L. J. Carter, Western Michigan College.*

A combined projective and psychogalvanic response technique was used in studying the reactions of three groups of subjects. Changes in palmar skin resistance, reaction time, and actual responses of examinees to incomplete sentences were considered. The technique may be of value in investigating nature and intensity of emotional conflict.

A Case of Extreme Language Disability Concealed by Stuttering. *Milton B. Jensen, Louisville, Ky.*

A 21-year-old woman developed stuttering at age 10 or 11, apparently to conceal the fact that she could not read and speak many words common to her age group. She was able to complete high school and hold a responsible clerical position. Instruction in reading and vocalizing has been accompanied by cessation of stuttering, without direct attack upon the stuttering itself.

Psychological Diagnosis and Treatment of Aphasia. *Maurice H. Krout, Chicago Psychological Institute.*

This is a study of disturbed capacity for symbolic thought, expression, and communication due to traumas, neoplastic growths, vascular insults, and C.N.S. lues. Diagnosis was based on Rorschach, Wechsler-Bellevue, and specialized tests. Re-tests determined course of treatment and discharge. A new conception of aphasia is indicated by these data.

The Results of Intelligence Tests on 240 Hospitalized Epilepitcs. *Homer B. Reed, Fort Hays Kansas State College.*

An individual intelligence test was given to each of 240 epileptics, C.A. 5–40, in a Kansas state hospital. The results were a median mental age of 6 years for the entire group, a small increase in M.A. between C.A. 5 and C.A. 20, no decline in median M.A. between C.A. 20 and C.A. 40, more scatter among epileptics than normals, and most failures in tests requiring the detection of something foolish.

Friday, May 2, 9:00 A.M.

SECTION B. DONALD G. MARQUIS, *Chairman*

Cortical Lesions Show the Functional Relationships among Ipsilateral and Contralateral Pyramidal Tracts as They Function in Bilateral Learned Responses. *P. S. Shurrager, Illinois Institute of Technology.*

Specific unilateral lesions, in Brodman's Area 4 of dogs, cause: (1) failure of learned (conditioned) flexion of contralateral musculature, and (2) failure of learned ipsilateral extensor musculature. Results are a function of the size of the lesion.

The response learned may be opposite to the UCR. The CR pattern is primarily dependent upon the patterns of bilateral Area 4.

EEG Relationships to Five Autonomic Variables. *Charles E. Henry and Chester W. Darrow, Institute for Juvenile Research, Chicago.*

Motor area EEG dimensions of frequency, amplitude, and pattern show relationships to autonomic functions independently expressed as systolic blood pressure, heart rate, palmar conductance, recovery-reaction quotient to stimulation, and palmar reaction to hyperventilation. Failure thus to subdivide these data obscures correlations.

Relation of Electroencephalographic to Palmar Galvanic Indications of Cortical Function. *Chester W. Darrow and Charles E. Henry, Institute for Juvenile Research, Chicago.*

Differences between amplitudes of motor unipolar (scalp to ear lobe) and motor-parietal bipolar EEGs provide clues to cortical-cortical as compared with cortical-subcortical potential differences relating to palmar conductance change, galvanic recovery-reaction quotient, and conductance level. Evidence regarding psychological correlates is presented.

Motor Components of a Sensory Response. *R. C. Davis, Indiana University.*

In the action potentials from the forearms two responses to an auditory stimulus are detected. The first is modified by stimulus intensity and adaptation; the second is apparently not affected by either. Both are modified in size and in form by induced tension and show an exact relation to it.

Some Observations on the Nature of Cortical Integration and in Sensorimotor Coordination and Thinking in Man. *Karl U. Smith, University of Wisconsin.*

Among different types of reaction times measured (simple reaction times, crossed and uncrossed visual

discrimination times, and controlled word association times), simple reaction times were the only values significantly increased after section of the intercortical neurones. The results suggest a theory of general neural organization within the cortex as a basis of sensorimotor coordination and word association.

A Preliminary Study of a Quantitative Measure of Flexibility in Human Thinking. *Esta A. Berg and David A. Grant, University of Wisconsin.*

This experiment was designed to explore the relationship between degrees of confirmation of correct "hypotheses" and readiness to shift these "hypotheses." It combined the Weigl-Goldstein-Scheerer abstract behavior concepts with techniques evolved at the Wisconsin Primate Laboratory. Increased reinforcement of the "hypotheses" facilitated ability to shift "hypotheses."

Analysis of the Influence of Set on Problem-solving Ability. *Harold Guetzkow, University of Michigan.*

The hypothesis that susceptibility to set is empirically distinguishable from the ability to surmount set was derived from sex differences obtained in Luchin's series of volume-measuring problems. This differentiation was confirmed by other tests of problem-solving ability and perseveration, and by demonstration of the summative effect of the two factors.

National Differences in Creativity. *Harvey C. Lehman, Ohio University.*

This study presents findings that have been obtained by: (1) taking a fair sample of creative works which are regarded by experts within each separate field of endeavor as of outstanding importance, and (2) ascertaining the number thereof that have been made by individuals of various nationalities.

Friday, May 2, 9:00 A.M.

SECTION C. HERBERT WOODROW, *Chairman*

The Role of a Selective Diary in Counseling. *James R. Patrick, Ohio University.*

Since perseverative ideas and feelings continue in the client between counseling sessions, it is suggested that the client jot down recurring troublesome ideas in relation to situations in a diary fashion for review at a future counseling session. Situations, if purposeful, are excellent reminders and may structure for effective recall. Some evidence supports this technique.

The Intellectual Demands of the Various Curriculi in a University. *Gaige B. Paulsen, Ohio University.*

A study of 757 graduates of Ohio University was made to compare the distributions of scores on the Ohio State Psychological Examination for the various schools. The varying demands of the different college curriculi are revealed by the comparison of the cumulative distribution of the percentages of percentile ranks on OSPE.

Problem Solving Behavior in Conflict Situations. *Robert H. Seashore, Northwestern University.*

A systematic classification of known problem solving methods to be used in diagnosing difficulties of personal adjustment and discovering alternative methods more suitable to the situation. Used in career planning and clinical counseling, and in constructing a profile of temperament.

A Two-Year Course in the Life Sciences. *Clarence Leuba, Antioch College.*

Man is studied in connection with both the internal environment described by biologists and the external environments described by anthropologists. The emphasis is on coherence, unity, and thoroughness. Universals in human nature and basic principles are stressed in the first year; individual differences and applications in the second.

The Use of Adjustment Inventory Items in Selection of Scholarship Candidates. *Joseph C. Heston, DePauw University.*

Scales for each sex have been derived from adjustment inventory items, to aid in the selection of university scholarship candidates. The items have been validated from criterion groups composed of pairs matched in high ability level and widely differentiated in academic achievement. Validity on other groups has been evaluated.

A Comparison of the Regression Equation and the Prediction Formula for Predicting College Success or Failure. *C. H. Ruedisili, University of Wisconsin.*

Predicted grade-point averages based on the re-

gression equation or on a special prediction formula (that extends the predictive range) are compared with actual grade-point averages of college freshman men, using only the ends of the predicted distribution. The regression equation gives "better" predictions, and now is the one used.

Some Anxieties of Present-Day College Men and Women. *C. W. Crannell, Miami University.*

Nineteen men (mostly veterans) and 34 women students were required to respond to the stimulus word, "worry," with 99 successive, written associations. The most frequent classifiable responses by the men dealt with the war; the most frequent type by the women related to academic standing.

Personality Factors in the Psychological Weaning of College Women. *Arthur W. Sherman, Jr. Ohio University.*

The questionnaire formerly used for measuring the emancipation status of older adolescents was revised and administered to 504 college women, results being compared with certain scales of the Bernreuter and Minnesota Multiphasic Personality Inventories. Parents of students in most and least emancipated groups were also studied. Factors related to achievement of emancipation are considered.

Friday, May 2, 9:00 A.M.

SECTION D. EDVIN BRYE, *Chairman*

The Effects of Mild Anoxia on Improvement with Practice in Three Simple Skills. *Roger W. Russell, University of Pittsburgh.*

Controlled observations have been made of the effects of mild anoxia on improvement with practice in three simple skills (arm-hand coordination, finger-dexterity, simple addition). The equated control and experimental groups consisted of 244 male *Ss*. Despite a decrement in absolute level of performance, improvement did occur during the anoxic period.

The Effect of Reliability of Reported Score on Learning. *Delos D. Wickens, Ohio State University.*

Three groups of *Ss* were given 12 trials on a pursuit-rotor. Scores were reported after each trial. Group 1 was told their actual score, Group 2 a score distorted by an added error, Group 3 a score unrelated to their actual performance. Superior reliability did not result in superior learning.

Retroactive and Proactive Inhibition after Five and Forty-eight Hours. *B. J. Underwood, Northwestern University.*

The recall of both of two contiguously learned paired-associate lists was determined after five and 48 hours. The results show that the recall of the second list is greater than the first after five hours, but that the two lists are equally well recalled after 48 hours.

Whole Versus Part Practice in a Complex Motor Task. *Earl D. Schubert and Don Lewis, University of Iowa.*

In a three-part motor task, practice could be given on any one of the three parts separately, or on any two of them in combination, or on all three together. One-part practice resulted, during test trials, in inferior performance on the complex task, but complex performance following two-part practice did not suffer by comparison with performance following whole practice throughout.

Positive and Negative Transfer in Motor Learning. *Don Lewis, University of Iowa.*

Negative transfer (associative interference) in a complex motor task has been demonstrated, along with the more commonly demonstrated positive transfer. Evidence for marked individual differences in susceptibility to transfer was found. Explanations were formulated for the failure of previous investigators to find clear proof of negative transfer in motor learning.

Intra- and Inter-day Learning of a Psychomotor Reaction. *Arthur J. Riopelle, University of Wisconsin.*

Twenty-three male sophomores were allowed four two-minute "self-paced" trials on the Vector Complex Reaction Time Apparatus for ten days. Daily means and sigmas increased. First day total scores correlated +.86 with second day scores, and +.54 with tenth day scores. Initial slope was independent of initial skill.

The Relationship of Verbalization and Remote Association. *W. J. Richards and R. H. Waters, University of Arkansas.*

Spearman has suggested the possibility that remote associations are a function of the verbalization of *S* during learning. Specifically, he suggests that under conditions of verbalization more forward than backward associations should be formed.

This hypothesis is not supported by the data of this study.

The Rate of Change in Learning to Learn Verbal Nonsense Material. *Isabel Stewart and P. S. Shurrager, MacMurray College and Illinois Institute of Technology.*

Each equated list (1–20) of nonsense syllables tachistiscopically presented according to a rotary-anticipation technique was learned to completion. Some individuals learn to learn a list of ten syllables in one or two repetitions.

Repetitions required in successive lists show a decrease in the variability as difficulty decreases.

Friday, May 2, 1:15 P.M.

SECTION A. ARTHUR W. MELTON, *Chairman*

Mechanomorphism: A New Term for an Old Mode of Thought. *R. H. Waters, University of Arkansas.*

The term *Mechanomorphism* is suggested to designate a mode of thought running through the history of psychology. It designates that theory which takes the machine as the standard of interpretation and explanation. Mechanomorphism as a label should have coordinate value with Anthropomorphism, of which it is the precise antonym.

An Experiment on the Genuineness of Unilateral Deafness Produced by Hypnosis. *Frank A. Pattie, Rice Institute.*

The genuineness of the apparent deafness of one ear produced by suggestion was tested by presenting two tones of nearly the same frequency separately to the ears. If *S*s reported hearing a beating tone, the deafness was obviously not genuine. In all *S*s tested this was the case. *S*'s behavior, if shown by unhyponotized *S*s, would be considered malingering.

Relaxation Training of Flyers in the United States Navy—Preliminary Report Based on Neufeld's "Brief Evaluation of the Relaxation Training Program." *Edmund Jacobson, Chicago.*

During the war, signs of excess strain appeared in many cadets. Relaxation training was begun in preflight schools, under officers instructed in the writer's laboratory. 15,000 cadets received instruction, resulting in lowered fatigue-tension ratings, reduced percentage of injuries, and better sleep as compared with controls. Cadets reported various subjective benefits.

Weight as a Factor in Transfer Time of Movement over Various Distances. *R. L. Chapman and H. F. Buegel, University of North Dakota.*

In altering two of the mechanical factors affecting transfer time of arm movement, it was found that a stable increase in transfer time is obtained by increasing both transfer weight and transfer distance. The existence of other factors was detected.

Behavior Situations in Student Adjustment. *Earle E. Emme, Bowling Green State University.*

This study emphasizes the wide-spread interest in psychological information. Adjustment-behavior, of a deliberative nature, especially when the individual reacts constructively in his life-situation, gives the base for four forms of adjustment-behavior: withdrawal; misrepresentation; compensation; and reality facing. Dangers are pointed out in the unwarranted use of this classification.

Saturday, May 3, 9:00 A.M.

SECTION A. FORREST A. KINGSBURY, *Chairman*

Some Problems in Clinical Psychological Testing. *Roy Schafer, Menninger Foundation.*

Three crucial problems in clinical testing will be discussed: (1) the hazards of increasing depth of interpretation; (2) the difficulty in distinguishing indications of character make-up from indications of symptom formation; (3) the difficulty in assessing *S*s of borderline adjustment.

An Evaluation of a Short Administration of the Revised Stanford Binet. *R. K. Meister and Virginia Kennedy, Moosheart Laboratory for Child Research.*

I. Q. scores obtained by determining an M.A. limen are compared with those obtained in the conventional manner for 100 cases. The results indicated that the limen-form I.Q. is sufficiently comparable to the full scale I.Q. for most clinical purposes and reduces administration time two-thirds.

Some Abbreviated Intelligence Scales. *W. A. Hunt, S. G. Klebanoff, I. N. Mensh, and M. Williams, Northwestern University.*

Several of the abbreviated intelligence scales so widely used in the military services were administered to 528 naval recruits representing a wide sampling of intelligence. The results are presented in terms of internal analysis, intercomparison of the tests, and validation against the Navy General Classification Test.

A Comparison of Two Measures of Deterioration in Psychotics. *Ann Magaret and Mary Simpson, University of Wisconsin.*

A low correlation was obtained between the deterioration indices of the Shipley-Hartford Scale and the Wechsler-Bellevue Intelligence Test on a group of mental hospital patients. Lack of agreement with psychiatrist's ratings suggests that factors other than conventional test performance must be included in a quantitative measure of deterioration.

An Appraisal of Wechsler-Bellevue Scatter Patterns in Schizophrenia. *Sol L. Garfield, Mendota VA Hospital.*

The W-B records of 67 schizophrenic and 46 hospitalized control patients were analyzed. Several diagnostic criteria offered for schizophrenia by Wechsler, Rabin, and Rapaport were not substantiated. A large amount of similarity between the two groups, as well as variability within each group, was observed.

A Method for Identifying Pattern Clusters in Test Score Profiles. *D. G. Ellson, Indiana University.*

Scores on a series of tests are converted to rectangular distributions (e.g., quintiles). Differences (D_p) between profiles are then determined as the sum of the absolute differences between corresponding scores on two profiles. A high proportion of low values for D_p identifies a prototype for a pattern cluster.

Comparison of the Results of the Kuhlmann Tests of Mental Development and the Revised Stanford-Binet, Form L in Normal Children. *J. L. Yager, Hines VA Hospital.*

Mean performance of 120 children aged 6–16 on the Stanford-Binet, Form L, was higher than on the Kuhlmann Tests of Mental Development, though the differences were not significant. Correlation between the test scores was .80 ± .03. Analysis on the basis of age, intelligence levels, and intervals between the tests yielded the same general results.

Saturday, May 3, 9:00 A.M.

SECTION B. WAYNE DENNIS, *Chairman*

A Skeptical Note on the Use of Attitude Scales Toward War. *Stanford C. Ericksen, Vanderbilt University.*

Results of the Thurstone-Peterson Attitude Toward War Scale administered during 1940, 1941, 1942, and 1946 were interpreted as indicating that the attitude object measured by this scale is highly abstract and does not give a meaningful picture of contemporary war attitudes.

Changes in Certain Attitudes, their Nature and Causes. *A. R. Gilliland, Northwestern University.*

Attitudes toward Germany, Japan, Russia, and England were measured by attitude scales and interviews during and following the war. Also attitudes toward the president, congress, etc. Directions and consistency of trends were analyzed and compared with historical events.

Three Methods of Analyzing Dreams. *Calvin S. Hall, Western Reserve University.*

Three methods of analyzing dreams for the purpose of diagnosing certain aspects of personality are described. These methods are content analysis, content interpretation and content translation. Exact procedures, and illustrations taken from a large sample of dreams, are discussed.

Personality and Parent Behavior. *Joan Kalhorn, Fels Research Institute.*

An analysis of the parent behavior of mothers who received high scores on the Minnesota Multiphasic Personality Inventory, as contrasted with a group receiving low scores, revealed that both groups differed from the average in parent behavior, primarily on the behavior cluster indulgence.

Changes in Parent Behavior during Childhood. *Alfred L. Baldwin, Fels Research Institute.*

From an analysis of parent behavior, the home environments of the children in the Fels study are

seen to decrease in warmth and intellectual stimulation but increase in restrictiveness as the child grows older. One of the important factors in the change is the birth of a younger sibling.

A Demonstration of P-technique in Determining Personality Structure. *Raymond B. Cattell, University of Illinois.*

P-technique—factorization within one person—should yield the same source traits as R-technique, save for the departure of unique from common traits. Data for 43 variables (objective, behavior rating, questionnaire), measured daily for one person, factorized to five source traits, which were identifiable with those from R-technique.

Laboratory Tests of Opinion Sampling Techniques. *Norman C. Meier, Univerity of Iowa.*

With a city-wide housing survey providing known characteristics of the universe, samples drawn in the laboratory with aid of maps and accessory data permitted comparison of paired samples by area method and by quota-control methods. Measures of the validity and adequacy of such distributions were reported.

An Experiment in Opinion Polling with Mark-Sensed Punch Cards. *H. H. Remmers and N. L. Gage, Purdue University.*

Problems in the design and execution of opinion polls by means of mark-sensed punched cards are described; they are discussed in terms of experience of the Purdue Opinion Poll for Young People. Results of such poll analyses in terms of speed and accuracy are reported.

Saturday, May 3, 9:00 A.M.

SECTION C. J. R. KANTOR, *Chairman*

Rate of Running and Rate of Learning as Related to the Palatability of the Food Reward. *P. T. Young, University of Illinois.*

Rats *run* faster in approaching a good food than in approaching a bad food, but we have not been able to demonstrate that they *learn* faster for one food than for another. The level of performance depends upon motivation (palatability) and learning (practice).

Spatial Orientation in the White Rat. *H. C. Wilcoxon and R. H. Waters, University of Arkansas.*

Rats were trained to go left on a double-T, elevated maze with curved starting positions. On critical trials, 16 were presented short-cuts to the "correct" food platform, 16 to the "incorrect." Each short-cut involved a right turn. Results are given theoretical interpretation.

An Experimental Study of the Relation Between the Shape of the Learning Curve and Delay of Reward in Maze Learning. *C. C. Perkins, Grinnell College.*

Five groups of white rats were run in a single choice maze, with both reward and non-reward delayed for 6, 12, 18, 24 or 30 ft. No correction was allowed. Shapes of learning curves varied for the different groups, with an increase in delay distance, from negative acceleration to an initial positive acceleration.

Development of a Discrimination without Differential Reinforcement of a Specific Response. *William K. Estes, Indiana University.*

An originally neutral stimulus which has repeatedly preceded the presentation of a reinforcing stimulus (e.g. food) will exert discriminative control over any operant response subsequently conditioned by means of that reinforcing stimulus.

The Effect of a Secondary Reinforcing Agent on Simple Black-White Discrimination Learning. *David Ehrenfreund, University of Iowa.*

Two groups of rats were trained to white-positive vs. black-negative. An empty food cup was placed in the negative box for one group but not for the other. The former group took approximately twice as long to learn. The principle of secondary reinforcement is invoked to explain the difference.

"Superstition" in the Pigeon. *B. F. Skinner, Indiana University.*

If food is repeatedly presented to a hungry pigeon by a clock which has no connection with the bird's behavior, operant conditioning will take place. A "superstitious" response emerges from the characteristic behavioral repertoire in the experimental situation and develops considerable strength. The response can be extinguished and reconditioned.

An Experimental Demonstration of a Motivational State Resulting from Non-Reward. *John H. Rohrer, University of Oklahoma.*

Two groups of rats were given 60 reinforcements of a bar-depressing response and then two extinction series. During the first extinction the interval between trials was varied; its effect was measured during the second extinction. Results are interpreted as offering evidence of a motivational state resulting from non-reward.

Saturday, May 3, 1:15 P.M.

SECTION A. DELOS D. WICKENS, *Chairman*

Counter Conditioning and Verbal Instructions as Factors Influencing the Conditioned Eyelid Response. *E. B. Norris, D. A. Grant and J. P. Hornseth, University of Wisconsin.*

The effect of inhibitive and passive instructions, and counter conditioning in the form of a shock, on the conditioned response of the eyelid to light was studied. It was found that, with the sensitization of the beta-response controlled, instructions significantly affected the CRs.

Dark Adaptation and the Pseudo-conditioned Eyelid Response. *D. A. Grant, E. B. Norris, and S. Boissard, University of Wisconsin.*

Results from 80 human *S*s show that previously reported changes in eyelid responses during pseudo-conditioning procedures should not be attributed exclusively to pseudo-conditioning reinforcement. It is indicated that the earlier findings consisted primarily of the sensitization of the beta-response of the eyelid to light. The sensitization occurred during dark adaptation.

The Course of Backward Conditioning. *W. N. Kellogg and Alice Spooner, Indiana University.*

The "backward conditioning" of finger-withdrawal by the buzz-shock method shows a diametrically opposite trend from that found in forward conditioning. Instead of giving typical learning or conditioning curves, the backward procedure gives curves of extinction or of negative adaptation—the CRs which occur being concentrated in the early trials.

Sensory Pre-conditioning of Human Subjects. *W. J. Brogden, University of Wisconsin.*

*S*s were given trials of tone and light while waiting for the *E*. After making reaction-time responses to light, these *S*s responded with reliably greater frequency to tone than did control *S*s given (a) only training trials to light and (b) trials of tone and training trials to light.

Intensity of the Conditioned Stimulus and the Strength of Conditioning. *D. E. Schneider and D. A. Grant, University of Wisconsin.*

Four lights of varying intensities were used to determine the effect of the CS intensity on the strength of conditioning. The analysis of variance design permitted investigation of other effects of variation of the CS. No systematic variation in strength of conditioning was demonstrated, and response strength was not significantly affected.

Effects of Pre-testing with the Conditioned Stimulus upon the Extinction of the Conditioned Eyelid Response to Light. *H. W. Hake, D. A. Grant and D. E. Schneider, University of Wisconsin.*

Pre-testing with the CS alone produced an extinction curve with an upward trend following the usual initial drop. This, however, was not significantly different from the monotone-decreasing control group curve. Eyelid CR's to light under light-adapted conditions were confined to a latency range of 250–500 msec.

Sensitization of the Beta Response as Affected by Verbally Induced Inhibitory Set and Counter-reinforcement. *J. P. Hornseth, D. A. Grant and E. B. Norris, University of Wisconsin.*

Inhibitory instructions reduced the *magnitude* of both the primary reflex and the beta-response of the eyelid to light, but did not significantly decrease the *frequency* of either response. Counter-reinforcement produced no significant effects on the magnitude or frequency of either response. Reflex character of the beta-response is thus suggested.

Saturday, May 3, 1:15 P.M.

SECTION B. A. R. GILLILAND, *Chairman*

Nominating Technique as an Aid in Establishing Criteria of Leadership. *A. C. Van Dusen and R. L. Shotke, Northwestern University.*

Using nominations, with reason, of the most and

the least wanted members for Patrol Leader positions in Boy Scout Troops, an attempt is made to establish a method of developing criteria and an operational working definition of leadership behavior.

The Derivation and Validation of a Generalized Visual Skill Profile for Close Jobs. *Joseph Tiffin and N. C. Kephart, Purdue University.*

Visual skill profiles for over 500 specific industrial jobs have been constructed from data sent to the Occupational Research Center at Purdue University. The present paper summarizes an investigation in which 450 of these visual skill profiles have been analyzed to derive a generalized profile for close jobs.

Shortened Methods of Job Evaluation. *Brent Baxter, Toledo.*

Shortened methods of job evaluation have been suggested by factor and multiple correlation analysis of job rating data. Additional data corroborate the presence of only two or three basic factors, but a satisfactory multiple regression equation using only a few rated factors was not obtained.

Construction and Use of Weighted Check List Rating Scales in Two Industrial Situations. *Edwin B. Knauft, State University of Iowa.*

The method of equal-appearing-intervals was used in constructing a merit rating scale for laundry press operators and one for retail bake shop managers. Reliabilities of .87 and .81 were obtained and the scales were found to be satisfactory as criteria of worker performance.

Changes in Applicant Qualifications Following the Installation of Employment Tests in Industry. *Eleroy L. Stromberg, Cleveland College.*

Test scores for successive samples of applicants for productive jobs, where employment tests have been installed on the basis of the present population, indicate that the measured qualifications tend to become more desirable from one period to the next. Implications for industrial consulting are discussed.

The Purdue Mechanical Adaptability Test. *C. H. Lawshe, Jr. and Joseph Tiffin, Purdue University.*

The method of construction, reliability, and validity of the Purdue Mechanical Adaptability Test are discussed. Relationships between scores and with other tests (including measures of general mental ability) will be presented, with a statement of possible usefulness for guidance and industrial selection purposes.

Improvement in the Performance of Card Stapling through the Analysis of Therbligs. *Charles S. Dewey, Chicago.*

The study concerns the improvement in the performance of card stapling through the operator's analysis of photographic records of eighteen therblig units over a ten-day period. The average improvement per therblig unit for the right hand was 16 per cent and for the left hand, 23.5 per cent.

PROCEEDINGS OF THE EIGHTEENTH ANNUAL MEETING OF THE EASTERN PSYCHOLOGICAL ASSOCIATION

J. McV. HUNT, *Secretary*

Institute of Welfare Research

Community Service Society of New York

THE Eastern Psychological Association met for the eighteenth annual meeting at the Chalfonte-Haddon Hall in Atlantic City, N. J. on April 25 and 26, 1947. Bernard F. Riess chaired the committee on local arrangements, which also included Roy B. Hackman, in charge of projection, and James Diggory, in charge of exhibits. Those attending the meeting numbered 591, which is considerably smaller than the 876 who attended at Fordham last year. Of those attending, 241 were members, and 350 were guests many of whom were also applicants for membership.

The program comprised 47 fifteen-minute papers, two films plus a repeated exhibition of films from the Psychological Cinema Register, a round table on *Human Engineering* and another on *Recent Statistical Developments*, the presidential address by Anne Anastasi, and a meeting of the whole addressed by F. S. C. Northrop of Yale University (see below).

The program committee, composed of Leo Crespi, Wallace Wulfeck, J. McV. Hunt, ex-officio, and Francis W. Irwin, chairman, classified the 47 papers into eight topical sessions (see program below). Two sessions each were devoted to *Personality and Clinical* (11 papers) and to *Personnel and Tests* (10 papers). The other topics were: *Audition* (5 papers), *Comparative* (6 papers), *New Laboratory Course at Columbia University* (3 papers), *Social* (5 papers), and *Vision* (7 papers).

PRESIDENTIAL ADDRESS

Friday evening was devoted to the presidential address and the business meeting. Henry E. Garrett introduced Anne Anastasi, president of the Association, who spoke on *The Nature of Psychological Traits*. Dr. Anastasi pointed out that the wide diversity of trait concepts in present-day psychology is the result of an underlying methodological limitation which has characterized not only trait studies but many other types of psychological investigations as well. The trait investigator has usually asked *what* is the organization of behavior or *what* are the traits into which the individual's behavior repertory can be classified rather than asking *how* does behavior become organized and *how* do psychological traits develop. Much of the content of psychology—including trait theories—still consists of generalized factual descriptions rather than principles of behavior. It represents a cataloging of responses within a specific (although not usually specified) setting, without responses to the conditions which bring about such responses. The apparent inconsistencies in the findings of factuo-descriptive investigations of traits can themselves point the way towards the understanding of the way in which behavior becomes organized. Thus, it is suggested that the greater consistency and ease of identification of traits in the intellectual as contrasted to the emotional sphere illustrates the greater cultural standardization of behavior in the former category. Similarly, the comparison of traits which have been identified among groups differing in age, education, occupation, sex, cultural milieu, and species contributes towards a clarification of the underlying principles of trait development and presents a fruitful field for future research. A more direct approach is the experimental manipulation of behavior organized through the interpolation of relevant controlled activities. In summary, Dr. Anastasi presented the problem of psychological traits as but one example of the need

for a more active search for the underlying principles which unify the superficial divergencies of the descriptive approach in psychology.

AT THE ANNUAL BUSINESS MEETING

1. The proceedings of the 1946 meeting, as printed in the AMERICAN PSYCHOLOGIST, October, 1946, were accepted.

2. The reports of the secretary and of the treasurer were accepted, and a budget for 1947–48 totaling $1,175 was approved.

3. Dr. Irwin, chairman of the Program Committee, reported in part that only 54 abstracts of papers for the 1947 meeting, as compared with over 70 for 1941 or the last meeting before the war, had been received, that two were withdrawn, and after careful examination, five of these abstracts were rejected upon unanimous agreement of the four members of the committee, that, although abstracts had improved, as many as 23 were judged "doubtful" or "reject" by one or more members of the committee, and that some of the most competent members of our Association fail to invest the time and care in the preparation of abstracts which will enable a committee to judge them with confidence. Report accepted.

4. Dr. Riess, chairman of local arrangements, reported the fine cooperation afforded by the hotel management and the advantages of meeting in a hotel, and then he pointed to the greater advantages of meeting under academic auspices. His report was accepted, and his committee discharged with the appreciation of the Association.

5. Dr. Seashore, secretary of the Committee on Professional Ethics, composed otherwise of Robert Brotemarkle, Irving Lorge, Dorothea McCarthy, and Walter Miles, chairman, read a report wherein it was pointed out in part that "the Eastern Psychological Association is primarily a regional society of psychologists organized for the promotion and exchange of scientific research and professional thought," that "it does not seem appropriate to expand the present conception of the EPA to include *operating functions* more appropriately handled by other organizations, specifically by the national body or by the state associations."

The resolution of the committee read: (1) that the Eastern Psychological Association should not establish a permanent Committee on Professional Ethics at this time; (2) that the Board of Directors be charged with responsibility for handling any problems of an ethical character which might be be brought to the attention of the Eastern Psychological Association; (3) that this report be transmitted to the proper executives and committee chairmen of the American Psychological Association with a covering letter which emphasizes the urgency felt by the membership of the Eastern Psychological Association for positive action along two lines: (a) the formulation and publishing of a code of professional ethics for psychologists, and (b) the activating of a satisfactory judiciary procedure for handling of cases of alleged professional misconduct; and (4) that the Board of Directors take appropriate action if an Eastern Psychological Association member should ever be censured by or dismissed from the American Psychological Association or any state organization.

This resolution, already approved by the Board of Directors, was accepted, and the Committee discharged with thanks.

6. *Elections:* In the absence of Professor Boring, chairman of the Election Committee, Dr. Stevens, the other member, read a humorous report describing the election machinery and the number of ballots received, and giving the statistical reliability of the election results. The minimum number of votes placing nominees on the election ballot for both president and director was seven.

Officers were elected to serve as follows: *President*, (1947–48), J. McV. Hunt, Director, the Institute of Welfare Research, Community Service Society of New York; *Secretary*, for the remainder of the term of J. McV. Hunt, (1947–49), Harold Seashore, Director, Tests Division, Psychological Corporation; *Treasurer*, (1947–50), Weston A. Bousfield, University of Connecticut, to replace Lyle H. Lanier who has served the Association as treasurer for 6 years; *Directors*, (1947–50), O. Hobart Mowrer, Harvard University and Helen Peak, Connecticut College.

7. *Appointments:* The Board of Directors appointed as new member of the Program Committee (1947–50), Richard Crutchfield, Swarthmore College; for the Auditing Committee (1947), William D. Orbison and Weston A. Bousfield, chairman; as representatives on the Council of the A.A.A.S. (1947–48), Elaine Kinder and (1947–49) Herbert

W. Rogers; for chairman of the Committee on Local Arrangements (1947–48), Roy B. Hackman, Temple University.

8. *New Members and Membership Requirements:* In presenting the applicants recommended by the Board, the secretary described the method of scrutiny employed by the new Membership Committee, composed of Rose G. Anderson and Weston A. Bousfield, and the decision of the Board concerning the requirements for membership. Although the By-Laws of the Association have been geared to the requirements for Associateship stated by the old American Psychological Association and the American Association of Applied Psychologists, our automatically following the change from one to two years of graduate study in Psychology, or to one year of graduate study and one of professional experience, made by the reorganized American Psychological Association, would constitute an upward revision of our requirements for membership without any action on the part of the Board or the Members. In the Board's discussion, it was agreed that one of the chief values of a regional association is the opportunity it affords graduate students to present research papers and to participate as scientific researchers. It was also agreed that the function of a regional association is scientific rather than professional. With these considerations in view, the Board voted unanimously to recommend that the minimal requirements for membership in the Eastern Psychological Association should continue to be one full year of graduate study of psychology at an accredited university or college. Associates and Fellows of the American Psychological Association should continue to be accepted for membership in the Eastern Psychological Association automatically. This recommendation will require a clarifying amendment to the By-Laws at the next Annual Meeting.

Of 166 applicants, 10 were rejected for lack of one full year of graduate work. The 156 applicants whose names had been posted on the bulletin board were recommended by the Board and accepted by the Members. This raises the membership of the Association to 918.

9. The secretary also reported the following actions of the Board of Directors:

a. In answer to a request that Association publish and circulate a certificate of membership suitable for framing in a professional office, it passed the resolution: "Be it resolved that since the Eastern Psychological Association is a regional scientific association of psychologists rather than a professional organization of psychologists, and since the Association exists primarily to conduct its scientific meeting and is little concerned with setting professional service standards, it would be inappropriate and undignified for the Association to publish a certificate of membership suitable for framing in a professional office."

b. In view of the imperfection of abstracts as they are now presented to the Program Committee abstracts for the 1947 and 1948 meetings will not be published.

c. The annual meeting for 1948 will take place at Temple University on Friday and Saturday, April 16 and 17.

10. *The financial statement* for the fiscal year 1946–47, prepared by the Treasurer, Lyle H. Lanier, and verified by the Auditing Committee, composed of Weston A. Bousfield and W. D. Orbison, is as follows:

FINANCIAL STATEMENT AS OF MAY 1, 1947

For the Fiscal Year 1946–47

INCOME

Membership Dues		
Dues for the current year (1946–47)..	$636.00	
Arrears	83.00	
Advance payments	3.00	
Guest Fees	352.00	
Interest on Savings Account	30.66	
Total Income		1104.66

EXPENDITURES

Publication of Proceedings	38.25	
Office of the Secretary	306.30	
Office of the Treasurer	155.00	
Printing and Stationery	230.30	
Postage	89.66	
Program Committee	24.89	
Lecture Fee	100.00	
Local Expense, Atlantic City (1947)	139.24	
Traveling Expenses of Officers	17.61	
Miscellaneous Supplies & Expense	36.29	
Total Expenditures		1137.54
Deficit for 1946–1947		32.88

BALANCE SHEET

Cash: Fifth Avenue Bank of New York	905.84	
New York Savings Bank	2063.97	
Petty Cash (Secretary)	20.00	
Petty Cash (Treasurer)	20.00	
Total Cash		3009.81
Capital: As of May 10, 1946	3042.69	
Deficit for 1946–1947	32.88	
Total Capital		3009.81

PROGRAM

Friday Morning

PERSONALITY AND CLINICAL: I

Chairman: Donald W. MacKinnon, Bryn Mawr College

An Analysis of some Basic Concepts of Psychotherapy. *Leopold Bellak, M.D., New York Medical College.*

A One-hour Psychodiagnostic Interview: An Analysis of 500 Cases Seen in Consultation with Psychiatrists and Internists. *M. Harrower.*

The Veterans Administration Personal Adjustment Counseling Program. *Marion R. Bartlett, Advisement and Guidance Service,* and *John L. Yale, Veterans Administration.*

The Psychologist's Role and Responsibility in the Clinical Teamwork. *Elisabeth F. Hellersberg, Institute of Human Development. N. Y.*

Effects of Shock Therapy on Performance on the Word Association Test. *Jean Zeaman, N. Y. Psychiatric Institute* (introduced by Joseph Zubin).

Some Aspects of the Personality of Male Juvenile Delinquents. *Dennis J. Buttimore.*

PERSONNEL AND TESTS: I

Chairman: John G. Jenkins, University of Maryland

The Measured Interests of Nurses. *Frances Oralind Triggs, Educational Records Bureau.*

A Scale for Judging Change in the Clients of Social Case Work. *J. McV. Hunt, Institute of Welfare Research, Community Service Society of New York.*

What is Mechanical Comprehension? *Frederick B. Davis, Office of the Air Surgeon, Army Air Forces.*

A Brief Description of a Reliable Criterion of Job Performance. *Leonard W. Ferguson, Metropolitan Life Insurance Company.*

Psychological Factors Associated with Pilot-Error Aircraft Accidents. *Richard H. Henneman* and *Howard J. Hausman, Headquarters, Strategic Air Command.*

COMPARATIVE

Chairman: Richard S. Crutchfield, Swarthmore College

"Tempo" of Activity as a Measure of Social Inter-Action. *Elaine F. Kinder, Rockland State Hospital and Yerkes Laboratories of Primate Biology.*

Conditions in Which Escape from Punishment Reinforces Responses Leading to That Punishment. *Gordon T. Gwinn, Yale University* (introduced by Neal E. Miller).

The Temporal Gradient of Retrograde Amnesia Induced by Cerebral Electroshock in the Rat. *Carl P. Duncan, Brown University.*

Amount and Direction of Transfer as a Function of Placement of Subgoal. *George M. Haslerud, University of New Hampshire.*

A Study of the Motivation for Food Hoarding in Rats. *Dalbir Bindra, Harvard University.*

An Apparatus and Technique for the Measurement of Gastric Motility in the Rat. *E. Jean Uehren, Johns Hopkins University* (introduced by Stanley B. Williams).

VISION

Chairman: Harold Schlosberg, Brown University

A Cathode-Ray Tube Technique for Investigating Time-Intensity Effects in Vision. *Neil R. Bartlett, Johns Hopkins University* (introduced by Clifford T. Morgan).

Visibility of Signals on a Cathode-Ray Screen when Seen at Different Durations after Fluorescence. *Alex L. Sweet, Johns Hopkins University.*

Dark Adaptation in the Detection of Radar Targets. *R. M. Hanes, Johns Hopkins University* (introduced by Clifford T. Morgan).

Day to Day Variability of Critical Flicker Frequency. *Henry K. Misiak, Fordham University* (introduced by Robert T. Rock, Jr.).

One Use of Reaction Time in a Test of Color Deficiency. *J. D. Reed, Johns Hopkins University.*

Figural After-Effects and the Visual Perception of Size. *W. C. H. Prentice, Johns Hopkins University.*

The Direction of the Assumed Light-Source in the Perception of Ambiguous Relief Patterns. *E. H. Hess, Johns Hopkins University* (introduced by W. C. H. Prentice).

NEW LABORATORY COURSE AT COLUMBIA UNIVERSITY

Chairman: G. R. Wendt, University of Rochester

A New Type of Introductory Course in Psychology. I. The Plan. *F. S. Keller, W. N. Schoenfeld, J. Volkmann, F. C. Frick,* and *D. H. Bullock. Columbia University* and *Mount Holyoke College.*

A New Type of Introductory Course in Psychology. II. The Apparatus. *F. S. Keller, W. N. Schoenfeld, J. Volkmann, F. C. Frick,* and *D. H. Bullock. Columbia University* and *Mount Holyoke College.*

A New Type of Introductory Course in Psychology. III. Laboratory Results. *F. S. Keller, W. N. Schoenfeld, J. Volkmann, F. C. Frick,* and *D. H. Bullock. Columbia University* and *Mount Holyoke College.*

Friday Afternoon

PERSONALITY AND CLINICAL: II

Chairman: Miles S. Murphy, University of Pennsylvania

Intelligence of Epileptics. A Pattern Analysis of the Bellevue Records of 200 Private Patients. *William G. Lennox, Children's Hospital, Boston, Mass.,* and *A. Louise Collins.*

Objective Method of Differential Diagnosis of Neuro-psychiatric Veterans. *Louise R. Hewson, Neurological Institute, N. Y.*

Some Psychological Aspects of Work-Interference Resulting from Physical Disability. *Morton A. Seidenfeld, National Foundation for Infantile Paralysis.*

Four Appraisals of Vocabulary Knowledge. *Irving Lorge, Teachers College, Columbia University.*

Clinical Syndromes in Speech and Reading Disorders. *Dorothea A. McCarthy, Fordham University.*

PERSONNEL AND TESTS: II

Chairman: Wallace H. Wulfeck, Federal Advertising Agency

The Nominating Technique, Its Uses and Limitations. *John G. Jenkins, University of Maryland.*

Group Opinion as a Predictor of Leadership. *S. B. Williams, Johns Hopkins University.*

Abbreviated Forms of the Bernreuter Personality Inventory. *Rose G. Anderson, Psychological Corporation.*

Handwriting in Measurement and Experiment. *Werner Wolff, Bard College.*

Methodology in Investigations of Span of Attention. *Irving J. Saltzman* and *W. R. Garner, Johns Hopkins University* (introduced by Clifford T. Morgan).

FILMS

An Instructional Film for the Fidelity-of-Report Experiment. *Wilbert S. Ray, Trinity College.*

Examining Personnel for Civilian Employment. *Louise R. Witmer, Civilian Personnel Division, War Department.*

Films Exhibited by the Psychological Cinema Register, Pennsylvania State College.

AUDITION

Chairman: Edwin B. Newman, Harvard Psycho-Acoustic Laboratory

Pitch Characteristics of Short Tones: Two Kinds of Pitch Thresholds. *J. M. Doughty* and *W. G. Garner, Johns Hopkins University* (introduced by Clifford T. Morgan).

Effect of Frequency Spectrum on Temporal Integration of Energy in the Ear. *W. R. Garner, Johns Hopkins University* (introduced by J. McV. Hunt).

Further Measurements of the Relation of Pitch to Intensity. *C. T. Morgan* and *W. R. Garner, Johns Hopkins University.*

Detection Thresholds and Tonal Thresholds in Auditory Acuity. *J. Donald Harris* and *C. K. Myers, Sound Laboratory, Medical Research Department, New London Submarine Base.*

Effects of Noise and Distortion Upon the Relative Intelligibility of Words. *J. C. R. Licklider, Harvard University.*

Friday Evening

PRESIDENTIAL ADDRESS

The Nature of Psychological "Traits." ANNE ANASTASI, Fordham University.

ANNUAL BUSINESS MEETING

Saturday Morning

SOCIAL

Chairman: Leo P. Crespi, Princeton University

Ego-involvement as a Factor in Judgment. *Carolyn W. Sherif.*

Objective Differences Among Various Types of Respondents to a Mailed Questionnaire. *Harold A. Edgerton, Ohio State University, Steuart Henderson Britt, McCann-Erickson, Inc.*, and *Ralph D. Norman, Rutgers University.*

What Do the "Don't Know" Replies to Attitude Questions Mean? *S. D. S. Spragg, University of Rochester, A. D. Freiberg, The Psychological Corporation*, and *P. G. Corby, The Psychological Corporation.*

A Preliminary Study of Individuals' Voting Consistency. *Launor F. Carter, University of Rochester* (introduced by S. D. S. Spragg).

"Defining the Situation"—An Essential Concept for Social Psychology. *S. S. Sargent, Barnard College.*

ROUND-TABLE ON "HUMAN ENGINEERING"

Chairman: Leonard C. Mead, Office of Naval Research

A Program for the Study of Human Motor Abilities. *Judson S. Brown, State University of Iowa.*

Some Interactions between Physical and Human Variables in Equipment Design for Optimal Human Use. *Harry Helson, Bryn Mawr College.*

Studies of Information and Transmission Systems for Human Intelligence. *Alphonse Chapanis, Systems Research.*

The Classical Problem of Span of Apprehension in Relation to Problems of Human Engineering. *Wendell R. Garner, Johns Hopkins University.*

Analysis of Human Tracking Behavior. *Franklin V. Taylor, Naval Research Laboratory.*

Some Human Engineering Problems in Supersonic Flight. *Clifford P. Seitz, Office of Naval Research.*

The Use of Synthetic Devices for the Determination of Machine Constants for Optimal Human Performance. *Malcolm G. Preston, University of Pennsylvania.*

Some Relationships between Studies of Verbal and Motor Skills. *Robert M. Gagne, Connecticut College.*

A Proposed Handbook of Applied Psychological Functions. *John L. Kennedy, Tufts College.*

The Human Factor in Product Design. *John D. Coakley, Psychological Corporation.*

FILMS

Films exhibited by the Psychological Cinema Register, Pennsylvania State College.

ROUND-TABLE ON CERTAIN RECENT STATISTICAL DEVELOPMENTS

(With the cooperation of the Institute of Mathematical Statistics)

Chairman: Bernard F. Riess, Hunter College

Sequential Analysis. *Irving Lorge, Columbia University.*

Staircase Methods. *Phillip J. McCarthy, Princeton* University.

Inefficient Statistics. *Frederick Mosteller, Harvard University.*

Discussion. *Jack W. Dunlap, Psychological Corporation, William E. Kappauf, Jr., Princeton University, Leon Festinger, Massachusetts Institute of Technology*, and *Joseph Zubin, New York Psychiatric Institute, Columbia University.*

Saturday Afternoon

ADDRESS

"The Body-Mind Problem And Its Bearing Upon Ideological Differences Between the U. S. A. and the U. S. S. R."

By F. S. C. NORTHROP, Sterling Professor of Philosophy and Law in the School of Law of Yale University.

In this address, Dr. Northrop pointed out that an essential connection exists between the international ideological conflicts in economics and politics and the different answers to the body-mind problem proposed in psychology. This occurs because the concept of the political person and the economic man in a given ideology must necessarily be restricted to what the philosophy and psychology of that ideology indicates a man to be. Consequently, different answers to the body-mind problem are accompanied by conflicting economic and political doctrines.

The body-mind problem arose as a consequence of two assumptions of modern physics specified by Galilei and Newton: (I) The distinction between

(a) sensed nature, *i.e.*, sensed qualities in private sensed space and time, and (b) scientifically conceived nature, *i.e.*, material atoms in public mathematical space and time. (II) (a) is related to (b) by a three-termed relation of appearance in which (1) the material non-sensuous atoms in mathematical space and time act upon (2) the observer, to cause the latter to project back (3) the sensed qualities in sensed space and time as mere private appearances.[1]

From the latter three-termed relation of appearance, Locke's mental substance can be deduced. It is the kind of entity which can function as the intermediary, second term in the three-termed relation. Were (2) the observer nothing but material substances, as Hobbes and certain recent behavioristic psychologists have suggested, sensed qualities in sensed space and time should not exist, even as appearances. It is with such a person that Locke's political person is identified, from which the laissez faire individualism of the traditional Anglo-Amerian ideology in considerable part derives.

Locke's, like Descartes', account of the body-mind relationship broke down for two reasons: (1) It failed to explain how a material substance in space can act upon a mental substance which is not in space; (2) it entailed a theory of ideas which, as Berkeley and Hume showed, renders the notions of material substance and mental substance meaningless. The immediate consequence was the philosophy of Hume, Mill, and Bentham and the psychology of William James and Titchener in which the person is nothing but the sequence of associated sense data. It is with the sensed pleasures or introspected wants of such a purely empirical, introspected person that the politically good and the economically valuable in British 19th century liberalism and contemporary Austrian and Anglo-American economic science are identified.[2]

With Feuerbach and Marx the distinction between sensed data and the public external material object is reaffirmed, with the resultant acceptance of thermo-dynamical, physico-chemical, neurological man as the real person. Hence the Marxian materialism and its thermo-dynamical labor theory of economic value. Hence, also, its fostering of Pavlov's behaviorism.[3]

None of these traditional solutions of the body-mind problem with their respective social ideologies takes care of all the facts. Hume's, Jevons', James', and Titchener's empiricism accounts for sensed qualities in sensed space and time, but fails to account for physical objects in public mathematical space and time. Marx's and Pavlov's materialism and behaviorism, conversely, account for the latter, while failing to account for the former. Locke and Descartes, who account for both, fail for the other reasons noted above.

How is the problem to be solved? Evidently the error centers in the two assumptions introduced into modern physics by Galilei and Newton which generated the body-mind problem in the first place.

These assumptions are: (I) The distinction between (a) nature as immediately sensed, and (b) nature as conceived in experimentally verified, mathematically formulated theory. (II) Sensed nature (a) is related to theoretically conceived nature (b) by the three-termed relation of appearance.

Analysis of contemporary physics shows that the first of these two assumptions must be retained. If the second assumption is also assumed, Locke's mental substance and all the subsequent inadequate attempts of modern philosophy and psychology to avoid the difficulties of its interaction hypothesis follow. Hence it is the second of the two assumptions introduced by Galilei and Newton which must be rejected.

Independent analysis of the method of mathematical physics confirms this conclusion. In this method, sensed factors are related to theoretical factors, not by the three-termed relation of appearance as Galilei and Newton affirmed, but by the two-termed relation of epistemic correlation.[4]

Forthwith, Hume's, James' and Titchener's empirically given self and nature, and Hobbes', Marx's, Watson's, and Pavlov's theoretically designated, thermo-dynamical, physico-chemical, neurological self are both real, the former no more an appearance than the latter. Forthwith, also, the self is kept within nature, being but a special case of the two-termed correlation between the sensed com-

[1] See Newton's *Principia*, Cajori edition, pp. 6–8, University of California Press, 1934.

[2] See the writer's *The Meeting of East and West*, Chapters III and IV, New York: Macmillan, 1946. Also Lionel Robbins. *The Nature and Significance of Economic Science*, London: Macmillan, 1935.

[3] *Ibid.*, Chapter VI.

[4] *Ibid.*, Chapter XII.

ponent and the theoretically conceived component of any natural object. Thereby interaction is avoided, and its difficulties are escaped.

Ideologically, this means that classical Anglo-American economic and political doctrine is valid for the sensed component of the person and Marxist behavioristic doctrine for the theoretically known component of the person. And since no contradiction is involved in the relation of epistemic correlation joining the two components, a new scientifically grounded ideology is at hand in which the traditional values of the U. S. A. and the U. S. S. R. are consistently combined without the limitations of either set of values by itself.

THE SENSIBLE ORGANIZATION OF COURSES IN PSYCHOLOGY[1]

DAEL WOLFLE

American Psychological Association

The title of this paper implies correctly that I do not believe that courses in psychology are sensibly organized. We offer our undergraduate students an assortment of courses, but almost never have we planned that assortment to provide a complete and balanced diet of psychological fare. Instead a student has his choice among many courses. There are those which must be given to satisfy a college requirement. There are some given because Professor X considers himself a specialist in the subject matter. There are those which the education department wants given for its students. And there are some which are taught for no very good reason at all. Since Professor X never visits Professor Y's classes, he does not know what Y teaches. The chances are fairly good that both teach much of the same material. They have never gotten together on the fields each should cover.

The title of this paper also implies, and again correctly, that I believe a sensible organization possible. We could examine the whole sweep of what we teach our students. We could plan our courses to minimize the amount of overlap. We could plan them so that one built logically upon another. We could plan them so that after a student had completed five or six of these better-planned courses he would know much more psychology than he does after sitting through five or six courses which bear different titles but which cover much of the same material with essentially the same degree of superficiality.

There is considerable interest among psychologists now in the training of future psychologists. There is a good deal of dissatisfaction with our present teaching. I am taking advantage of that unrest to direct attention to our undergraduate teaching—the place where we attract students into psychology or where we repel them, the place where we try to give a future psychologist the basic fund of information upon which the graduate school can later build.

I intend to present some figures describing the extent to which the most commonly given undergraduate courses in psychology overlap in content and repeat each other. My analysis is based entirely on textbooks, as it has not been possible to analyze classroom lectures. After demonstrating the amount of overlap, I will try to analyze some of the reasons for it. Finally I will suggest some means by which the overlap might be minimized and our teaching made more effective.

Several years ago Henry (1) published the results of a questionnaire sent to a number of colleges and universities to determine which undergraduate courses in psychology each offered. Recently Sanford (2) made a similar study, partly by examining college catalogues and partly by questionnaire. Sanford's data have not been published, but he has kindly made them available to me. The data from the two studies naturally do not agree in all particulars. I have, however, used both as the basis for selecting a group of ten undergraduate psychology courses which are most frequently given in American colleges, normal schools, junior colleges, and universities. The list, in approximate order of frequency, is shown in Table 1.

I have tried to find the most frequently used textbooks for each of these courses. That was more difficult. I examined Sanford's data and talked to a number of teachers and students from different places and to representatives of several publishing companies. From those sources of information I made up a list of commonly used textbooks, the authors of which are named in Table 1. Whether these texts are the most commonly used in every case is uncertain and not very important.

The textbooks were then analyzed, partly by me and partly by the members of a graduate seminar

[1] Address of the retiring president of the Midwestern Psychological Association delivered at Chicago, Illinois, May 2, 1947.

which I taught at George Washington University. The analyses consisted of a list of the topics discussed in each text and a record of the amount of space devoted to each topic. Before the student analyses were started, the students practiced on a common text until they and I could agree on the kinds of topics to list and the fineness of the breakdown of content desired.

TABLE 1

Ten most commonly offered undergraduate courses in psychology and frequently used texts for each

COURSE	FREQUENTLY USED TEXTBOOKS
Elementary Psychology	Woodworth Ruch Dashiell Munn
Educational Psychology	Gates, Jersild, McConnell and Challman Pressey and Robinson
Child Psychology	Morgan Jersild
Social Psychology	Britt Klineberg Young
Applied Psychology	Berrien Crane Poffenberger Gray
Adolescent Psychology	Cole
Abnormal Psychology	Morgan Maslow and Mittelmann Conklin Dorcus and Shaffer
Mental Hygiene	McKinney Klein
Tests and Measurements	Greene Tiffin Hunt
Personality	Allport Shaffer Young

I have taken these content analyses and have made several comparisons of them. Different texts intended for the same course were compared. Texts for use in different courses were compared. Then the several texts for a single course were averaged to produce a kind of hypothetical average textbook. Thus I have combined the elementary texts written by Woodworth, Dashiell, Ruch, and Munn to produce an average elementary text and the educational texts written by Pressey and Robinson and by Gates, Jersild, McConnell, and Challman to produce an average educational psychology text.

Figure 1 shows profiles of these average texts for the five most frequently given undergraduate courses: elementary psychology, educational psychology, child psychology, social psychology, and applied psychology. The same data are presented in Table 2.

Listed at the left-hand side of Figure 1 are some thirty psychological topics. I have arranged these topics arbitrarily, but in an order which puts similar ones together. Wherever a profile drops to zero it means that the average text represented devotes less than half of 1 per cent of its total content to the topic named directly to the left. The scale at the top of each profile is in percentage terms. The profile thus shows the percentage of the total content of one of these hypothetical average texts which is devoted to each of the topics listed. For example, the average introductory text devotes about 4 per cent of its total content to introductory definitions. It devotes zero per cent to descriptions of animal behavior. That does not mean that animal studies are never cited in elementary texts, but that animal behavior as animal behavior is not discussed. About 9 per cent of the average introductory text consists of description and discussion of behavior at birth and the biological development of the individual. The other topics for each of the profiles can be interpreted in the same manner.

It is immediately apparent that the five profiles have some similarities. All five show inclusion of material on numerous topics. In other words, these texts, which were intended for use in five different courses, all treat the same set of topics. The only substantial exception is the fact that about a third of the material in the average applied text does not deal with topics found in the texts for the other four courses. Another way of pointing out the amount of overlap in the content of these five groups of texts

is to say that nine of the thirty-one topics are specifically covered in all five courses, and that twenty-one of the thirty-one are treated in at least three of the courses.

Examination of the profiles shows a number of places in which two or more of the five courses are very much alike. I have marked places to examine particularly by drawing lines across the figure. The top line points out that introductory, educational, and child psychology all give a fair amount of emphasis to the processes of development of the individual. Nine per cent of the average introductory text is devoted to this topic. The average educational psychology text gives it 8 per cent, and the average child psychology text 18 per cent. Social and applied psychology include smaller sections.

The second line is drawn opposite the topic of individual differences. The first three types of texts discuss this topic, giving it, in each case, 8 per cent of the total text content. Thus students who take these three courses get essentially the same material in the same amount of detail in all three courses. If a student also takes applied psychology he finds that 8 per cent of that course is also given over to the study of individual differences, this time with a little more practical slant.

The third line corresponds to the topic of learning. Here the three most common courses give 8, 11, and 6 per cent respectively of their total content to the study of learning. The other two give 2 or 3 per cent. If a student takes all five courses he gets five doses of learning theory and illustrations, but does not know much about learning.

Emotion is the topic indicated by the next line. Six per cent of the average introductory text, 5 per cent of the average educational text, and 10 per cent of the average child text is on the topic of emotion. If the student takes social psychology he gets another dose, this time amounting to 4 per cent of the total. In applied, if the student is still willing to take psychology courses, he gets another tiny dose of emotion amounting to 1 per cent of the course.

The next-to-the-last line is drawn opposite the topic of personality. If a student takes all five of the courses for which profiles are drawn, he gets five treatments of personality, amounting to between 2 and 8 per cent of the total content of the five texts.

The bottom line shows that all five courses discuss social and cultural factors in development. The amounts range from 1 to 12 per cent.

TABLE 2

Relative emphasis on different psychological topics in 'average' textbooks for five psychology courses

	ELEMENTARY	EDUCATIONAL	CHILD	SOCIAL	APPLIED
Introduction	4%	2%	3%	2%	2%
Animal Behavior	0	0	0	4	0
Biological Development	9	8	18	1	2
Physiological Psychology	7	0	0	0	1
Sensation	7	0	0	0	0
Perception	5	0	4	2	0
Attention	3	0	0	0	0
Statistics	2	0	0	0	0
Individual Differences	8	8	8	0	1
Personnel Selection	1	2	0	0	8
Vocational Guidance	1	0	0	0	2
Group Differences	0	0	0	7	2
Learning	8	11	6	3	2
Memory	4	2	1	1	1
Efficiency in Learning	2	15	1	0	4
Achievement Measures	0	10	0	0	0
Thinking	5	5	5	0	1
Language	1	0	9	2	0
Imagination	3	0	1	2	0
Motivation	7	1	4	10	2
Emotion	6	5	10	4	1
Personality	6	2	6	8	3
Mental Hygiene	4	7	0	0	9
Disorders	2	4	3	5	2
Social Development	1	4	12	12	3
General Social Psychology	2	5	0	12	0
Attitudes and Morale	0	4	3	18	2
Attitude Measurement	1	0	0	2	1
Influencing People	0	0	0	7	16
Interests	0	4	3	0	1
Efficiency in Work	1	0	0	0	12
Other Material	0	3	3	0	25

Other similarities could be pointed out. Thinking, for example, is studied in three courses and amounts to 5 per cent of each. Imagination takes up from 1 to 3 per cent of the time in three different

courses. Perception is studied in three courses and takes up from 2 to 5 per cent of each.

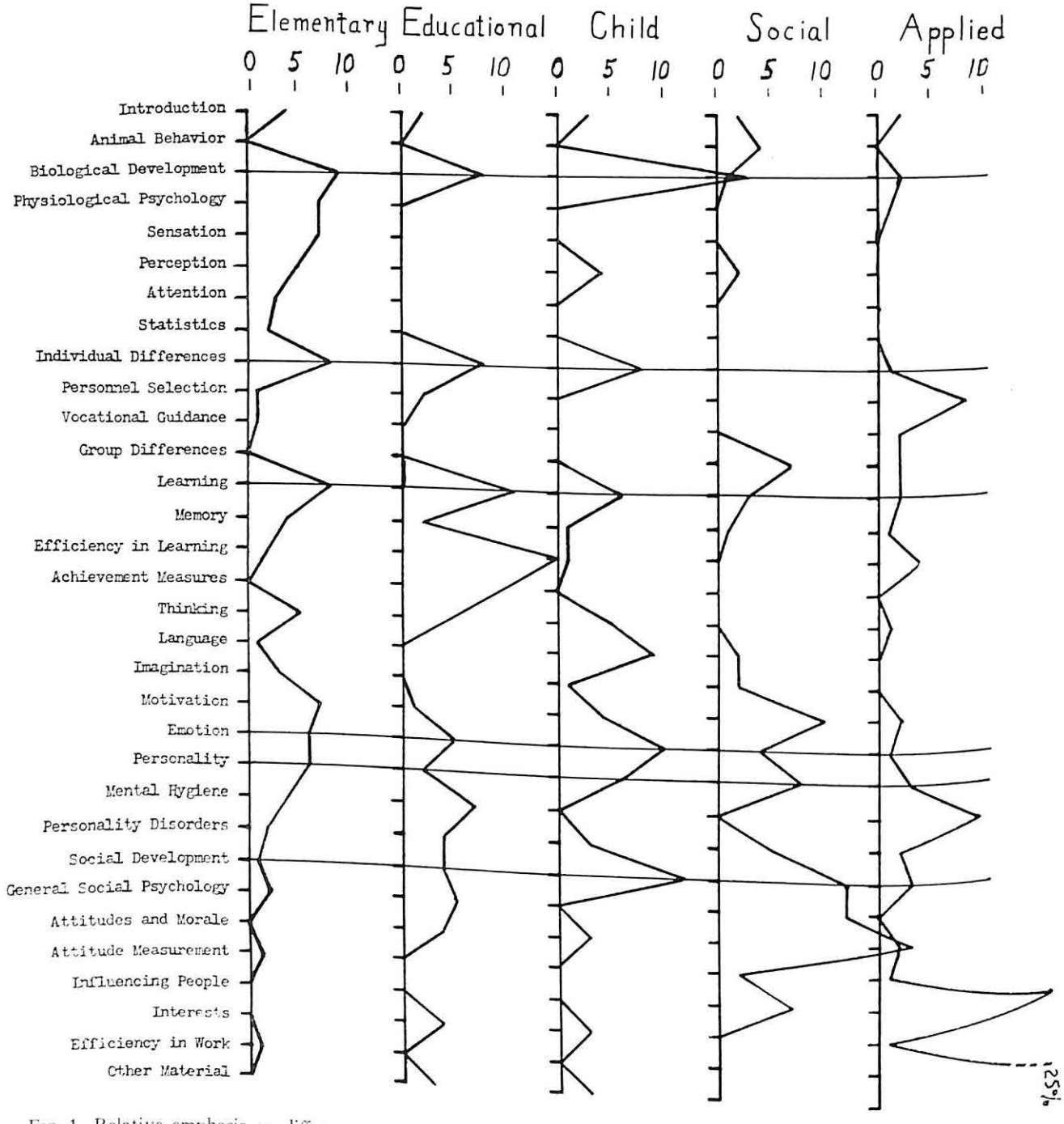


FIG. 1. Relative emphasis on different psychological topics in the 'average' textbooks for the five most frequently given psychology courses. The 'average' textbook in each field was analyzed in terms of the topics listed at the left. The percentage of its content devoted to each topic is shown by the distance of the profile from its base line. The scale at the top of each profile is in terms of percentage of total content.

The differences in the percentages quoted are in many cases no greater than the differences among texts which were written for use in a single course. Among the introductory texts, Woodworth has twice as much on memory as does Dashiell and three times as much as Ruch. Ruch devotes a good bit of space to mental hygiene; Munn gives none. Woodworth and Munn emphasize motivation; Ruch and Dashiell

give it only half as much space. Ruch contains a section on vocational guidance; the other three do not. The two educational psychology texts show similar differences. Pressey and Robinson pay much more attention to efficiency in learning than do Gates, Jersild, McConnell and Challman. But these latter authors give a great deal of space to personality, mental hygiene and mental disorders, while Pressey and Robinson give these topics a much shorter discussion.

Our students have long known of the overlap in courses, although they may not be able to give the exact figures. I have heard students say, "That course is easy if you have had Psych 1," and "He gives the same lectures in every course he teaches." The story is told of one faculty member in a large Midwestern university who lectured to a class for three weeks before discovering that he was using his lecture notes for another course not scheduled for that semester. The students, apparently, were too docile or too accustomed to such confusion to complain.

Imagine a student who has studied Ruch's text in elementary psychology and Morgan's in child psychology. He is now taking educational psychology using Gates, Jersild, McConnell and Challman as a text. This program is not an unusual one. His new text contains 805 pages divided into twenty-one chapters. The first chapter of fifteen pages, dealing with the scope of educational psychology, he finds quite new. Following it there is a chapter on the development of behavior, thirty pages, a topic which he has covered in eighteen pages in Ruch and fifty in Morgan. The third chapter deals with physical and motor development, a topic he has covered in greater detail in Morgan. The fourth chapter of forty-one pages is on emotional development. Similar material has been discussed by Ruch for twenty pages and by Morgan for forty-two pages. The fifth chapter is entitled *The development of social behavior*. Its fifty-two pages contain much in common with Morgan's forty-eight-page chapter on *Social development*. The next chapter on mental development is a new organization, but the facts in it are scattered through the previously studied texts. The nature and measurement of intelligence, which he studies next for thirty-one pages, is quite the same material on IQ and MA and the Stanford Binet which he has had for fifty-three pages in Ruch and for forty pages in Morgan.

Thus it goes. Some of the remaining chapters have been dealt with but briefly in the student's previous courses, but will be elaborated more in future ones. For example, the chapter on tests and measurements is a brief summary of a course which he will take later. The only chapter which deals with a topic unique to educational psychology is Chapter 15, *Transfer of training*.

While students have long known of the extent to which our courses overlap and repeat each other, professors have not realized or have not admitted the extent of their sins. In order to emphasize the similarities between some of the courses which usually bear different labels, I have made up a set of simple rules for textbook writers, as follows:

If you wish to write an educational psychology text, start with a good average introductory text. Remove the chapters which deal with the nervous system and sense organs and write three new chapters to use up the space. These three new chapters will have such titles as *Learning in the schoolroom*, *Measuring student progress*, and *Social psychology of the schoolroom*. The first of these new chapters will take care of the fact that the average educational psychology text gives more attention to efficiency in learning than does the average elementary text. The second new chapter will include the material on measurement of achievement that educational psychology texts usually contain. The third will pad out the treatment of social psychology sufficiently to make it agree fairly well with the average educational psychology text.

While you are collecting royalties on your text in educational psychology you will want to write a child psychology text. The rules are easy to follow. Start again with that good average elementary text that provided the basis for your successful text in educational psychology. Again remove the pages on sensation and the nervous system, but leave in those on perception. Take out the little bit of statistics that the introductory text contained. Take out, too, the parts on memory and mental hygiene and cut down the treatment of motivation. Then rewrite two chapters and write two new ones. Rewrite the material on the baby at birth to make it longer and more detailed. Rewrite the chapter on emotion so that it can be called *Emotional development*. The two brand-new chapters can be called *Language development* and *Social development*. *Language development* is new. *Social development* will

be fairly easy since much of the material was already included in the special chapter entitled *Social psychology of the schoolroom* that you had to write for the educational psychology text.

Actually, of course, you will want to make a few more changes than merely writing new chapters. But these are not difficult. As you read over and copy the elementary text used as a starting point, change the wording slightly in a number of places. For example, in writing the educational text be careful to use the word *pupil* instead of the word *subject*. When you write the child psychology text go through it carefully to see that all the *subjects* have been changed to *children*.

It will also help give the new texts a fresh flavor if you change some of the experimental studies used as illustrations. You might, for example, describe a conditioning experiment in which children instead of dogs were used as subjects. It will not, however, be necessary to change many of these illustrations. Most of them are equally at home in texts intended for use in introductory, educational, or child psychology courses.

The final rule is to rearrange the chapters. If intelligence was discussed early in the elementary text, put it near the end of the educational psychology text. If learning was taken up before personality in that book, reverse the order when you write the child psychology. The actual order is unimportant. There is no agreed-upon order for discussing the various topics in any of these fields. The same author has, in fact, pretty much reversed his own order in bringing out a second edition of his text.

These rules are, of course, presented in an ironical vein. I present them, however, as a slightly oversimplified description of the very great amount of overlap that exists in the texts most commonly used in the most frequently given undergraduate psychology courses. I do not recommend following these rules, but examination of the texts leads one to suspect that their authors, consciously or unconsciously, did follow them pretty closely.

In justice to the writers of our texts, I must point out that as one goes down the list of courses most commonly given, one finds a number which depart markedly from the profiles typical of the three courses described in detail. The average social psychology text shows a quite different pattern from those of the first three described. The profile of the average applied text differs even more. But note that both cover many of the same topics discussed in the other texts. The most original text of the five illustrated in Figure 1, that for applied psychology, has only about a third of its content devoted to topics not included in the average elementary text.

The other five of the ten most frequently given courses can be described more briefly. Profiles of these courses are not presented, partly to avoid complicating Figure 1 and partly because the existence of overlap is sufficiently well demonstrated in the figure as it is.

Only one text in adolescent psychology was examined, that by Cole. In its subject matter it overlaps child psychology texts at a number of places. Every topic except language making up 8 or more per cent of the average child psychology text is also treated in the adolescent psychology text. It also overlaps the texts used in courses in abnormal psychology, personality, and mental hygiene in its emphasis upon social and emotional development, mental hygiene, and personality and its disorders. There is very little material that is unique to this textbook.

The average abnormal psychology text shows far less overlap with those previously mentioned than do the texts for any course discussed so far. It contains some material on physiological and sensory processes, some on learning and memory, and frequently contains a discussion, by now familiar to the student, of differences in intelligence. On the whole, however, the authors of textbooks in abnormal psychology have selected a single set of closely related topics and have devoted their entire texts to the discussion of those topics. Unfortunately, the authors of other texts will not leave the abnormal field alone. The student entering a course in abnormal psychology is likely to have encountered previews in any of the five most frequent courses, in a survey course on fields of psychology, in a course on personality, or in one on mental hygiene.

The texts in mental hygiene overlap to a large extent the material also presented in courses on abnormal, child, educational, and adolescent psychology. Some of them contain material also presented in social psychology courses. On the other hand, some of the applied psychology texts contain chapters on mental hygiene.

The authors of texts on tests and measurements,

like the authors of abnormal psychology texts, have generally selected and adhered to one closely related set of topics. The students, however, have already become partially familiar with that material in courses on educational and applied psychology.

Texts on the psychology of personality differ markedly one from another. An average text, however, shows a great deal of overlap with those intended for use in mental hygiene courses and with those used in child, adolescent, social, and abnormal psychology. In discussing personality development, personality deviations, social influences on personality, and kindred matters, the authors bring in much material common to other courses.

As one goes on to the more specialized and less frequently given courses he is more likely to find them concentrated on a single topic or a few closely related topics. For example, there are courses on statistics, on the psychology of motivation, or on individual mental tests. But overlapping content is by no means limited to the 10 courses which have been named. Courses in experimental psychology, in clinical psychology, in fields of psychology cover much of the same ground that the student has become familiar with in the first 10 courses.

Now the overlap in general topics which is plotted on the five profiles and which I have briefly sketched for other courses does not necessarily mean that the treatment in different texts is identical. The chapters on learning and memory in an introductory text, for example, could differ very greatly from chapters on the same topics in a child psychology text. But frequently, as a matter of fact, they do not differ greatly. Several years ago when we first began to discuss seriously the problem of overlapping course content, Helen Wolfle interested one of her bright students in making a tabulation of the frequency with which specific experimental studies were cited in the texts she had read in different psychology courses. The student went through five texts: Woodworth's *Psychology*, Guilford's *Fields of Psychology*, Morgan's *Child Psychology*, Shaffer's *Psychology of Adjustment*, and Young's *Motivation of Behavior*. The following well-known studies were described in four of these five books: Freeman, Holzinger, and Newman's work on identical twins reared apart; Freeman, Holzinger, and Mitchell's work on foster children; Hartshorne, May, Maller, and Shuttleworth's studies on the development of character; and Pavlov's conditioned reflex studies. These were covered in three of the five books: The development of intelligence tests by Binet and Simon; Ebbinghaus' work on the curve of forgetting; Cannon's studies of physiological changes in emotion; Hurlock's comparison of different incentives; Jung's introversion-extraversion types; Jung's association tests; Kohler's work on insight in apes; Warden's techniques for measuring the strength of drives; and Watson's experiment on conditioned emotional responses. Many other studies were described in two of the five books, but there is no need to press further the point that if a student takes more than one course in psychology, he is extremely likely to find the second course repeating parts of the first one. In this particular case the student left psychology and graduated with honors a year later as a philosophy major.

I do not know the exact effect of all this repetition on the student. We know as a general principle that repetition aids learning. But we have not demonstrated that repeating the same or nearly the same discussion in two different courses leads to the desired mastery. Students sometimes come upon a section that looks very like material already studied in an earlier course and pass over it with the excuse that they already know it. A slightly different attitude was expressed by a student who worked part time in the APA office. She said one day, with an air of patient understanding of professors' failings, "When you hear a psychology professor tell you something that you didn't know before, it is interesting and you like him. When you hear the same thing later on from other professors, you are just bored." Being bored is not conducive to learning. Deliberate repetition for the sake of emphasis and review may make our students learn their lessons better. The unsystematic and frequently unrecognized repetition that characterizes many of our texts is another matter.

One factor importantly responsible for the overlap in psychology courses is the fact that we have no regular sequence of courses. A related cause is the fact that we offer a number of different types of courses. Each by itself may serve a particular purpose, but these purposes overlap and consequently the contents do also. Let me list some of the types of courses we offer.

1. General survey courses, for example the in-

troductory course and courses describing the different fields of psychology.

2. Courses dealing with some special psychological topic, for example courses on the psychology of learning or social psychology.

3. Courses dealing with some special age group, for example child or adolescent psychology.

4. Courses dealing with psychological methods, for example statistics or experimental psychology.

5. Courses dealing with the application of psychological methods and knowledge to a special group, for example educational psychology and industrial psychology.

6. Courses taught for a special group of students, for example psychology for nurses, or psychology for students of business.

7. Courses dealing with the content of psychology itself, for example history of psychology or systematic psychology.

Partly this variety of different kinds of courses stems from the fact that we have to accommodate different types of students in the same classes. Some students take one or two psychology courses as electives. Some major in another field but are required to take courses in psychology, for example students of education who are required to take educational psychology. Some students have no permanent interest in psychology but nevertheless major in it because they find it interesting, easy, or with classes scheduled at convenient hours. And some major in psychology with the serious intent of becoming psychologists.

If we could segregate students into these four types, and offer different courses for each, the amount of overlap would be greatly diminished. But that is difficult. For one reason, the students themselves frequently do not know in which group they will ultimately belong. For another, present teaching loads sometimes make further subdivision of classes impossible.

I am not at all sure that we can entirely eliminate the kind of overlap I have been discussing. But I am positive that it is desirable for us to try, and that careful planning of all of the courses offered by a department would eliminate a lot of it and would result in better courses than we now teach. Here are some specific suggestions.

1. The first is that all the teachers in a department get together to talk over their course offerings, to learn what their colleagues are teaching, and to find out how much their courses overlap their colleagues'. Discussions of this kind will almost inevitably lead to better planned teaching.

2. The local situation on a campus may make it necessary to offer some courses which largely overlap other courses. If this is the case, let us recognize the situation for what it is and try to keep the same students from taking largely overlapping courses. If the psychology department has to give a course in educational psychology, or if the education department itself gives that course, and if a course in child psychology must also be offered, then give a student no credit for one if he already has credit for the other.

3. Establish different courses for psychology majors and non-majors to as full an extent as possible. In the past this type of segregation has been extremely difficult, for students did not know about psychology until they came to college and did not decide to be psychology majors until after they had had a few courses in the subject. That situation is gradually changing. A little work in psychology is being given in a slowly increasing number of high schools. Some work in psychology is included in general survey courses given to undergraduate students before they choose a major subject. The number of psychologists in the country and the general awareness of what they do are increasing. The result of these factors is that some high school students now know that they are going to major in psychology when they get to college. During the past year I have had letters from a number of them, asking where they can get the best undergraduate training, and asking what they should take during their undergraduate years in order to have the best preparation for graduate work later on. This month I have appointments to talk with two groups of Washington, D. C., high school seniors who will be starting to college next fall and who are contemplating majoring in psychology. As more and more students know about the field before they come to college, it will be more and more easily possible to plan some courses for psychology majors and others for students with a more casual interest in it.

4. We can, and I believe we should, reorganize the basis on which we decide what courses to offer. Surely seven different types of courses are too many. The most desirable method of reducing that number

would be to make more of our courses deal with special psychological topics. Every one of the five courses shown in Figure 1 devotes some space to the biological development of the individual. Every one gives specific attention to the social development of the individual. Concepts of human development occur in a number of other places throughout these and other courses. It would be quite possible to concentrate this material in a course on human development that would have a distinctive content important for psychology majors and that would be as useful to some other groups as are many of our present courses.

In a similar manner it would be possible to develop courses on learning and memory, on individual differences, on emotion and motivation, on social psychology. Some courses would still have to deal with particular methods useful to the psychologist. For example, a course in statistics would still be desirable. And a general introductory course would have to be given on most campuses. But most of the advanced courses, particularly those intended for psychology majors, could be defined in terms of the topics covered.

5. Once our courses are organized predominantly along the lines of distinctive topics rather than on the many bases now current, it would be possible for us to begin to develop definite sequences of courses; that would, for example, make it possible for the teacher of social psychology to know that every member of his class has already had a course on learning and memory and a course on human development. Knowing that his students have covered these topics, he would not have to start social psychology with a review of all the rest of psychology. Similarly, the teacher of the course on individual differences could know that each of his students has completed a course in statistics and would not have to explain the mean to a heterogeneous group which included some mathematics majors and some who had not heard of an average since they left grade school.

I do not offer these particular courses or sequences as final. They are meant as illustrations of a possibility that we have largely neglected. Which particular courses should be offered and in what sequence they could best be given is for many teachers on many campuses gradually to determine. It would not even be necessary that the same courses or sequences be given on all campuses. But each department could consider what improvements it could make. I know of no department which could not improve its own offerings by reorganizing its instruction along the general lines I have outlined.

Psychologists, like everyone else, need motivation. Let me therefore conclude with what appear to be the advantages to psychology of widespread, serious, and continued efforts to plan courses that individually would be better organized and collectively would provide a sequence of distinctive courses, each of which would build upon instead of repeating its predecessors.

In the first place, this effort would result in more efficient instruction and more effective learning. It would remove much of the boredom which students now experience in some of our classes and would allow them to learn more in a given number of courses.

In the second place, the more systematic set of courses would, I am confident, appeal to more discriminating students. We get all the best students in our introductory courses. I am not at all certain that we interest our fair share of the best students enough to have them continue in psychology. The future of psychology, of its standing among the sciences, and of the service it renders to society depends primarily upon the caliber of the students who as undergraduates decide that they want to be psychologists. Let us offer them the kind of sensible organization which appeals to better students.

REFERENCES

1. HENRY, E. R. A survey of courses in psychology offered by undergraduate colleges of liberal arts. *Psychol. Bull.*, 1938, **35**, 430–435.
2. SANFORD, F. H. Unpublished manuscript.

ON DEFINING PSYCHOLOGY AS A PROFESSION

CLAIRETTE P. ARMSTRONG

New York City, N. Y.

SINCE legislation to license psychologists is being considered in some states, attention necessarily turns to a definition of the profession. It is now the responsibility of the psychologist to attempt to define and delimit himself in the applied fields, so that the public, and particularly legislators, may understand what may be encompassed. Also since the law covering each licensed profession is sometimes detailed in a clear-cut pattern of definition and limitation, as in New York State, psychologists must think through a feasible, working definition that will be administrable under the law.

The Connecticut Bill (3) certifying psychologists offers no definition of a psychologist, nor does the Virginia law (8). Both merely posit requirements and standards, namely the Ph.D. degree in psychology and the number of years of experience in the applied fields. Indeed the Mental Hygiene Law of New York State certifying psychologists as examiners in mental deficiency, to sign commitment papers for defectives, (with a psychiatrist), only specifies "A person who shall have had two full years of postgraduate study in psychology at an incorporated university or college and three years of actual clinical experience at the time of his certification as such, shall be and become a certified psychologist (7)."

Defining psychology as a profession gives pause even to a psychologist, in view of the protean forms of applied psychology. A psychologist generally thinks in terms of his own field or specialty or activities. However psychology is more apt to be defined from the viewpoint of what the psychologist does,—perhaps the best method for legislative purposes.

On the basis of replies to a questionnaire of the Office of Psychological Personnel of the National Research Council, a job analysis was recently made of the work performed by psychologists in twenty-eight occupations (10). The occupational descriptions were based on material regarding positions in which 600 psychologists were employed. Aside from educational and research areas in which a number of applied psychologists also work, the chief fields, many overlapping, are the school, clinic, court, child-guidance or other agency such as welfare agencies, (including those for the various types of physically handicapped), institutions for the feebleminded, the mental, general, or neurological hospital, juvenile correctional or penal institution, and prison. Then there are the industrial or personnel psychologist, public opinion analyst, occupational adviser, vocational counselor, consulting psychologist.

To illustrate the manifold activities of psychologists in a few milieux, some of their duties are summarized as follows:

> The public school psychologist administers individual and group tests to school children for purposes of diagnostic and remedial work, determining intelligence level and information relative to personal and social adjustment. Gives various types of intelligence, interest, achievement, aptitude, personality, and other tests, interprets results, and may write up case studies. Reports findings to parents and teachers concerned. May perform or supervise therapy.
>
> Supervises remedial work of special or classroom teachers and gives aid as needed to improve pupils' rate of learning and to facilitate social adjustments.
>
> Confers with parents and teachers with regard to problems of instruction and remedial work. Lectures to groups or confers individually with parents and others concerning psychological problems of pupils.
>
> Interviews pupils concerning adjustment problems. Interviews may be for obtaining information for diagnosis to be used in connection with test results, or for assisting pupils in adjusting themselves to school and other situations (10, p. 565).
>
> The clinical psychologist, among other duties, interviews clients coming to the clinic, administers, scores, interprets individual intelligence, personality, aptitude and other tests to assist in diagnosis of the case; counsels and in some cases gives psychotherapy. Prepares, writes, and reviews case studies; makes reports to staff or referring agency to assist in diagnosis or makes suggestions as to the disposition of the case. At times this involves signing papers committing to institutions (10, p. 566).
>
> In the general or neurological hospital, the psychologist gives all types of individual tests such as personality, performance, intelligence, to patients of various ages to determine special abilities, disabilities, and deterioration. Prescribes treatment on basis of diagnosis, and generally consults or advises disposition of cases, etc. (10, p. 570).
>
> In industry the personnel psychologist develops or directs analysis of jobs, the preparation of job specifications and the development and standardization of selection tests, etc. The personnel technician recruits, interviews, and selects

personnel and may adapt and apply aptitude and trade tests in selection, etc. The occupational analyst studies jobs in plants, describes work performed, analyzes abilities and training required, etc. (10, pp. 574–579).

The duties of the consulting psychologist vary according to his special field. The private consultant may test and interview individual cases who seek assistance or are referred by schools, industry, etc., and may specialize in vocational guidance, remedial work, or psychotherapy (10, p. 575).

The National Roster of Scientific and Specialized Personnel of the War Manpower Commission describes simply though less completely *The job of Psychologist* (9), in much the same manner as the foregoing.

The duties listed under each specialty vary with every situation, nor are specific duties confined to any one specialty for many diverse duties may be included in some situations and fewer in others.

The clinical psychologist considers his own field basically important,—the scientific measurement of abilities and disabilities, of intelligence, of impairment, of emotional stability, of personality generally, then diagnosis and psychological reeducation. Clinical training is indeed the *sine qua non* of psychological practice in all fields.

Major General Paul R. Hawley, Chief Medical Director of the Veterans Administration states: "We consider that the clinical psychologist has three chief functions,—diagnosis, research, and therapy. The diagnosis of personality characteristics will remain the primary task of the psychologist, for his training makes him better qualified than the psychiatrist in this field. We hope our psychologists . . . will employ a wide range of psychological procedure—including intelligence tests, personality inventories, attitude tests, vocational and other types of aptitude tests, projective procedures, and group situational tests such as the psychodrama and work-sampling methods. The psychologist has an armamentarium of wide range for measuring many aspects of human personality and mental disease (2, p. 298)."

When differentiating the fields of clinical psychology and psychiatry, Dr. James G. Miller, Chief, Division of Clinical Psychology, Neuropsychiatric Service, Veterans Administration, points out that during the war, "It became recognized that the diagnostic skills of psychologists and their superior understanding of the principles of normal behavior and how these can be applied to problems of personnel adjustment were invaluable adjuncts to the medical profession (6, p. 181)". Furthermore:

"Each profession has its characteristic tasks with a vague region of overlapping in some areas. It is probable that a majority of military clinical psychologists carried on psychotherapy in certain types of cases. Almost always this was under the direction of, or in collaboration with, psychiatrists or medical officers who attended to the somatic problems involved, but nevertheless in the military situation, working together as a team, both professions did nearly similar tasks for patients without somatic involvement or serious mental abnormality. This was therapy and it was called 'therapy'—recourse was rarely had to the euphemism 'counseling' . . . It is clear that in the future psychotherapy will be explicitly among the usual tasks of clinical psychologists, but it is essential for the protection of both patients and psychologists that this practice be conducted in the medical framework with no trespassing into fields of surgery, diet, the use of drugs, or similar procedures which are proper precincts for the medical profession (6, p. 182)".

Dr. Miller much as others, enumerates the duties of the clinical psychologist, among which he "conducts psychometric tests and measurements appropriate to a variety of mental and nervous conditions and situations, including tests of intellectual ability, projective tests, examinations of attitudes and aptitudes, group and individual situational procedures. . . . Interprets and reports the above findings in relation to the patient's problems of personality adjustment (5, p. 4)."

Likewise Dr. Karl A. Menninger notes that "the discipline of psychology on the other hand brings to medicine not only that essential *vitamin*, that too long lacking element which it needs, . . . also a tradition of objective measurement, of clearly defined logic, or properly methodological procedure which clinical practice and clinical thinking tend to make us forget and neglect. Traditional psychiatric nosology has finally been forced into open bankruptcy, largely by the penetrating symptomatological analysis made by the psychologists (4, p. 140)."

In the Dictionary of Occupational Titles, the Job Analysis and Information Section, Division of Standards and Research, United States Department of Labor, under the aegis of the United States Employment Service, defines psychology "for use of public

employment officers and related vocational services" as follows:

> Studies science of the human mind, its activities, capacities, functions and behavior; applies psychological techniques and facts to fields of human endeavor; studies environment, heredity and conditions leading to the present state of mind; studies delinquency problems; conducts various forms of psychological tests; performs experiments on human beings or animals; analyzes phenomena of human consciousness; applies scientific tests to prospective employees to determine the particular jobs they are best fitted for (1, p. 714).
>
> A clinical psychologist studies patients brought to clinic; observes behavior and appearance, studies family history and advises proper treatment; may give mental tests to patients (1, p. 188).

This information, it is explained, was secured from direct observation for job analysis, augmented by a compilation of occupational data secured from libraries, employers, trade and labor associations, and public employment officers.

These authoritative statements concerning the functions of psychologists are assembled as a foundation for a working definition which should be precise and explicit without limiting the development of psychology as an art and science, also inclusive enough to cover the multiple branches of the profession, yet sufficiently succinct and brief to be included in the law.

With complete recognition of the complexities and pitfalls of the task, it is suggested that if only as a *point de depart* for further consideration, something on this order might be postulated: A person practices psychology who independently applies the laws and precepts of mental life as experimentally determined in the psychological laboratories, and who employs psychological principles, methods and procedures in the varied fields of human activities without the use of drugs, for the purpose of psychological diagnosis, classification, guidance, measurement, evaluation, re-education, appraisal, analysis, selection, and counseling,—all for better human adjustment.

REFERENCES

1. *Dictionary of occupational titles.* Department of Labor, United States Government Printing Office, Washington, D. C., 1939, Part I.
2. HAWLEY, PAUL R. The importance of clinical psychology in a complete medical program. *J. consult. Psychol.*, 1946, **6**, 292–300.
3. HEISER, KARL F. Certification of psychologists in Connecticut. *Psychol. Bull.*, 1945, **9**, 624–630.
4. MENNINGER, KARL A. Psychology and psychiatry. *Amer. Psychologist*, 1947, **2**, 139–140.
5. Mental hygiene clinics of the Veterans Administration. *Circular No. 169*, Veterans Administration, Washington, D. C., July 15, 1946.
6. MILLER, JAMES G. Clinical psychology in the Veterans Administration. *Amer. Psychologist*, 1946, **1**, 181–189.
7. New York State Mental Hygiene Law. *Circular, Chap. 27, Consolidated Laws*, 1944, **19**, 1.
8. The certification of clinical psychologists in Virginia. *Amer. Psychologist*, 1946, **1**, 395–398.
9. The job of psychologist. *Occupational brief No. 42.* National Roster of Scientific and Specialized Personnel of the War Manpower Commission. Sept. 1, 1945.
10. SHARTLE, CARROLL L. Occupations in psychology. *Amer. Psychologist*, 1946, **1**, 559–582.

Across the Secretary's Desk

THE DETROIT MEETING OF THE APA

The fifty-fifth annual meeting of the APA was crowded: crowded with people, papers, and professional problems. There were two thousand people attending the session. Two hundred of them read papers and at least another two hundred took part in symposia and round table discussions or served as chairmen of sessions.

This was the first meeting for the APA using only hotels. Headquarters were at the Hotel Statler. Sessions were scheduled there and at the Book-Cadillac Hotel. Practically all the members attending lived at one of these or one of the other downtown hotels. Only the film sessions and the evening programs on Wednesday, Thursday, and Friday were held outside the two hotels, at the Rackham Memorial Building, a mile or two away. Hotel meetings were a new experience for the APA, and not entirely a satisfactory one. It was harder to find one's friends when one had to look not only among the hundreds of other psychologists there but also among the hotel's other guests.

There was a good deal of discussion of where to hold future meetings. A campus is the ideal spot in the judgment of most members. But those who ask why we don't meet on campuses forget that organizations, like individuals, must wait for invitations. We are too big for most campuses, and universities generally like to use the September vacation period for repairing their dormitory and dining room facilities and for vacations for their service personnel. Campuses with enough nearby hotels to allow us to live in hotels and meet in university buildings are rare. Resort hotels, which would allow us to get off by ourselves, are usually too small to house all who would attend. Even those that are large enough, for example Sun Valley, are expensive, too far away to use regularly, and do not have enough rooms for scientific sessions. For the next few years we will probably have to meet in city hotels. This year Denver was selected for the 1949 meeting.

Boston was selected a year ago for the 1948 meeting. The Hotel Statler will again be headquarters. The officials of the Detroit Statler were surprised last spring at the number of rooms we wished for meetings; this fall they were surprised at the number of people in those rooms listening to papers.

If the divisions wish it, we can name in advance the hotel at which each division will have its headquarters. That will allow the members who make room reservations far enough ahead of time to choose a hotel in which other members of similar interests are likely to be living.

This year we were fortunate in having a number of distinguished foreign visitors. Professor William Stephenson of Oxford, Professor James Drever, Jr. of the University of Edinburgh, Dr. and Mrs. Jean Paulus of the University of Liége, Professor Mario Ponzo of the University of Rome, Dra. Mercedes Rodrigo of the National University of Colombia, Dr. Loh Seng Tsai of the University of Nanking, and Dr. Stefan Baley of the University of Warsaw all came to this country for the meetings. Several other foreign psychologists who were studying in this country or who have recently come for that purpose were also there: Dr. Mariano Yela-Granizo of the University of Madrid, Dr. Horacio J. A. Rimoldi, Buenos Aires, Dr. Paul H. Schiller of the University of Buda-Pest, and Mr. C. S. Gibb of the University of Sidney, Australia. Several of these guests will remain in the United States for a few weeks to a few months visiting American friends and universities before returning to their home institutions.

Four evenings were used for programs. Tuesday evening the 18 APA divisions held their business meetings and listened to the addresses of the division presidents. Staggering the business meetings so that some started at 7, some at 8, and some at 9 P.M. allowed attendance at more than one, but even so, it was impossible for every member to attend the meeting of every division in which he was interested. At least three divisions did not have a quorum of members present to transact business. The audiences for presidential addresses ranged from nine to several hundred.

On Wednesday night there were four programs: the annual business meeting of the APA Council of Representatives; a gathering of psychologists employed by the Veterans Administration; a public lecture by Dr. Henry Brosin, Chairman of the De-

partment of Psychiatry of the University of Chicago; and a symposium on contributions of psychology to education, with papers by three of the foreign visitors, Drever, Rodrigo, and Stephenson. On Thursday night Carl Rogers gave his presidential address under the title *Some observations on the organization of personality*. On Friday night Mr. Ralph Evans, Superintendent of the Color Control Department of Eastman Kodak Company, gave an address on psychological problems in photography illustrated with a large number of colored slides.

Past meetings have been criticized as consisting too much of short papers on highly specific topics. To counteract this criticism, the lectures on Wednesday and Friday nights were scheduled. They were not well attended. Those who did attend felt embarrassed because of the eminence of the speakers and the smallness of the audience. Meetings of this character will probably be tried again next year, but unless the members wish to attend them, they will not be continued.

The personnel placement service of the APA moved to Detroit for the week to help psychologists wanting jobs and employers wanting psychologists. It was easier to help the first group than the second. Fifty-one persons registered with the office in the hope of finding new positions. Seventy-four employers came to look for psychologists; all but a few of these wrote job descriptions, including range of salaries, which were available to anyone who came in.

The Council of Representatives held its annual business meeting on Wednesday night to elect new committee members and chairmen and to consider the numerous recommendations which had been prepared for it by the Board of Directors, the Policy and Planning Board, and the Association's committees. The full proceedings of the business meeting and reports of APA committees and representatives to other organizations will appear in next month's American Psychologist. Here are some of the principal decisions reached.

Dues and club-rate subscriptions to APA journals will be increased the first of 1948. The increases are made necessary by the increased cost of carrying on the many APA activities; the most important of these increases is in printing costs. In 1945 the APA had a surplus of about $7000; in 1946 the surplus was less than $2000; in 1947 we will have a deficit of about $10,000. In order to balance the 1948 budget the following increases were authorized: dues for Fellows, Associates, and Student Affiliates will all be increased by $2.50 a year; dues for other classes of Affiliates will be $4.00 a year; club-rate subscriptions which this year were $13.00, $8.00, and $7.50 will next year be $20.00, $12.00, and $11.00.

A change in procedure affecting members who are late in paying dues was approved by the Board of Directors. In the past, when a member paid late, he received all the journals to which his dues entitled him whether he wanted them or not and without any additional charge. In the future, when he pays late, he will receive the journals only if he asks for them and only if he pays the additional cost of ordering and shipping these journals from the printer.

A problem which the Council discussed at some length but on which decisions were deferred until next September was the question of requirements for election as an Associate member of the APA. The Policy and Planning Board had recommended that the requirement for election as an Associate be increased to the doctor's degree. Representatives decided to discuss that recommendation with their divisions and to be prepared to vote on the proposed change next September.

The Council approved a Policy and Planning Board recommendation that the requirement for election as a Fellow be set at five years of acceptable experience after receiving the doctor's degree. It is now either four years of experience or acceptable published post-doctoral research. That recommendation will be submitted to the APA members for a mail vote next spring.

The Council of Representatives elected Carroll L. Shartle Treasurer of the Association for 1947–1952 and Robert R. Sears and Theodore M. Newcomb as members of the Board of Directors for the period 1947–1950. The members of the APA elected Ernest R. Hilgard President-elect. The new division officers, members of the Council of Representatives, committee members and chairmen, and representatives to other organizations will all be listed in the November American Psychologist.—DAEL WOLFLE

Psychological Notes and News

DR. RAOUL NIHARD, Professor in the Insitut Supérieur de Sciences Pédagogiques of Liége, Belgium, died on July 26, 1947. Professor Nihard was cooperating editor for Belgium and the Netherlands for the *Psychological Abstracts* from 1934 until his death.

If you wish to receive the questionnaire for possible certification by the American Board of Examiners in Professional Psychology, write to the Secretary of the Board: Dr. John G. Darley, 101 Eddy Hall, University of Minnesota, Minneapolis 14, Minnesota. The questionnaires should also be returned to him.

Twelve hundred psychologists had requested certification forms by September, 1947.

MERRILL ROFF has accepted the position at the Minnesota Institute of Child Welfare which became vacant with the retirement of Dr. Florence Goodenough. He was formerly Chief of the Department of Psychology of the School of Aviation Medicine, Randolph Field, Texas.

J. STANLEY GRAY has accepted a position as professor of psychology at the University of Georgia. He was formerly at the University of Denver.

The American University, Washington, D. C. has announced the appointment of SAMUEL ENGLE BURR, JR. as professor and head of the Department of Education in the College of Arts and Sciences. He will serve as the director of the summer session in 1948.

Richardson, Bellows, Henry & Co. announce the appointment of two new members to their staff: HAROLD A. EDGERTON, formerly professor of psychology at the Ohio State University; and ELLIOTT DANZIG, formerly instructor at the University of Pennsylvania.

ALBERT K. KURTZ has joined the faculty of Pennsylvania State College at the rank of professor. During the last year he taught at Michigan State College; previously he was with the Life Insurance Agency Management Association at Hartford.

PAUL E. FIELDS has been appointed professor of psychology at Wabash College, Crawfordsville, Indiana. Previously he was head of the department of psychology at Ohio Wesleyan University.

LOUIS GELLERMANN has been appointed chairman of the new Committee on High Psychological Standards of the Washington State Psychological Association.

JOHN N. STAUFFER, formerly assistant director of the Veterans Guidance Center at Harvard, has accepted a position at Wittenberg College, Springfield, Ohio, as dean of students and assistant professor of psychology.

DORWIN CARTWRIGHT has been appointed director of the Research Center for Group Dynamics at the Massachusetts Institute of Technology.

STANFORD C. ERICKSEN has been made full professor and head of the psychology department at Vanderbilt University.

JESSE B. RHINEHART has resigned his position as assistant professor in charge of the Psychological Clinic at the University of Illinois to become chief psychologist at the VA Mental Hygiene Clinic in Indianapolis. He will supervise the training of students enrolled in the VA clinical psychology training programs at Indiana and Purdue Universities.

On September 1, RUTHERFORD B. PORTER accepted a position as professor of psychology and education and director of the college counseling service at the Northern Michigan College of Education at Marquette, Michigan.

The Roy H. Simmons prize in psychology at Willamette University, Salem, Oregon, for the year 1947–1948 was awarded to SARA ANNE KENNEDY and JAMES GILMORE.

JAMES C. CRUMBAUGH has received an appointment as instructor in psychology at the Memphis

State College, Memphis, Tennessee. He was formerly in the Aviation Psychology Program of the AAF and for the past two years has been connected with Gifford-Hill Pipe Company, Dallas.

FRANCIS J. DEIGNAN has been appointed instructor in psychology at Trinity College. He was formerly vocational appraiser for the VA at Clark University.

VICTOR W. EIMICKE has been appointed psychologist in the Intensive Business Training Program Unit of the Evening and Extension Division, City College, School of Business, New York.

HELEN MARGULIES MEHR is now working as school psychologist at the Bureau of Child Guidance, Board of Education, Brooklyn, New York.

WILLIAM H. HOLLIS, research associate and instructor of industrial accident prevention, Center for Safety Education, New York University and Stevens Institute of Technology, has been appointed Senior Safety Engineer of the Los Alamos Scientific Laboratory.

A number of changes have been made in the staff of the department of psychology of the University of Kansas at Lawrence. The present staff consists of the following members: ROGER G. BARKER, Chairman; HARRIETTE GALANTIERE, FRITZ HEIDER, GRACE M. HEIDER, MILTON W. HOROWITZ, BEULAH M. MORRISON, MARGARET M. RIGGS, JAMES E. SIMPSON, ANTHONY J. SMITH, and HERBERT F. WRIGHT.

The department of psychology of the University of Missouri has announced several staff additions. J. BRADLEY REYNOLDS was appointed assistant professor in February, 1947. New members of the staff for September 1947 are GEORGE WISCHNER, assistant professor; RUTH ALLEE, JEAN ALLARD, and MARTIN DEUTSCH, instructors. ROBERT S. DANIEL is now an associate professor.

The psychology department of Louisiana State University has been enlarged considerably following the appointment of P. T. TESKA as acting chairman. Additions to the staff at the rank of assistant professor include ROBERT DREHER, DAVID HERMAN, and MRS. STANLEY PRESTON.

RALEIGH M. DRAKE will be professor of psychology and head of the department at Kent State University, Ohio. For the past six years he served in the same capacity at Mary Washington College of the University of Virginia. Dr. Drake will succeed D. W. PEARCE who has resigned after being head of the department for 27 years. Dr. Pearce will continue to serve on the staff.

CHARLES N. WINSLOW is joining the staff as an associate professor and director of the Psychological Clinic. He was formerly at Brooklyn College.

CHARLES C. PERKINS, JR., has accepted a position as assistant professor at Kent. He was formerly at Grinnell College.

STEPHEN HABBE has joined the staff of the National Industrial Conference Board. He was previously associated with the Life Insurance Agency Management Association of Hartford, Connecticut.

FRANZ A. FREDENBURGH, formerly assistant to the president of the A. S. Beck Shoe Corporation, has been named dean of the faculty of the Junior College of Commerce, New Haven, Connecticut.

JOHN R. BEERY, professor of education and coordinator of the Guidance Center of the University of Miami, Coral Gables, has been appointed dean of the School of Education.

JEROME SCHIFFER has recently accepted a position as Clinical Psychologist at the VA Mental Hygiene Clinic, North Little Rock, Arkansas. Formerly he was at the University of Kansas.

DOROTHY RETHLINGSHAFER has joined the staff of the department of psychology of the University of Florida. She was formerly at the Woman's College of the University of North Carolina at Greensboro.

Both of the state universities of Florida have become coeducational institutions. Florida State College for Women has been renamed Florida State University. The University of Florida at Gainesville will retain its former name.

THEODORA M. ABEL, formerly at Letchworth Village, New York State Department of Mental Hygiene, has joined the Research Project on Contemporary Culture at Columbia University, under

the directorship of Ruth Benedict. In addition, she has accepted the appointment of therapist at the New York Consultation Center, 133 East 71st Street, New York 21.

ART A. KRAMISH has been transferred from the Veterans Administration regional office at Cheyenne, Wyoming to the one at Denver.

C. ROBERT PACE has accepted an appointment as Associate Director of the Evaluation Service Center of Syracuse University in charge of research in higher education. His most recent position was at American University; previously he was with the Bureau of Naval Personnel. JAMES W. BROWN will also be an Associate Director of the same center. He will be in charge of audio-visual services. Dr. Brown has been on leave of absence from the State of Virginia where he was director of audio-visual education.

LYLE K. HENRY, formerly Assistant Director of Personnel, University of Kentucky, has resigned to accept a regular Army commission as Major in the Adjutant General's Department. He has been replaced by ROBERT W. HENDERSON, who did his graduate work at Akron University and Western Reserve; he served in the Army as Captain, Adjutant General's Department.

FRANCES E. SCHULZE, formerly at Casements Junior College, Ormond Beach, Florida, has accepted an appointment as instructor at Hobart and William Smith Colleges.

The Pennsylvania Psychological Association held its annual meeting in Harrisburg on May 10, 1947. In the morning session, papers were presented by Lester P. Guest, Harold C. Reppert, and Harry W. Karn. In the afternoon, the following officers were elected: Carroll A. Whitmer, president; Mildred L. Sylvester, president-elect; Harry W. Karn, secretary; and Bruce V. Moore, treasurer. The Executive Committee consists of Robert A. Brotemarkle, Mary I. Elwood, Esther K. Rosen, Morris S. Viteles, Guy E. Buckingham, and Emalyn R. Weiss.

The annual convention of the National Society for Crippled Children and Adults will be held at the LaSalle Hotel, Chicago, November 3–5, 1947. The program on the first day, Monday, will be on the theme: *The Handicapped—a Great National Resource*; on Tuesday, *Rehabilitation*; and on Wednesday, *Cerebral Palsy*. All interested persons are invited to attend.

The Fourth Governor's Conference on Exceptional Children will be held on Friday, October 24, 1947, at Springfield, Illinois. It is sponsored by the Illinois Commission for Handicapped Children.

The Mid-Eastern Region of the American Association on Mental Deficiency will hold a one-day meeting at the Hotel John Marshall in Richmond, Virginia, on Friday, October 31. Anyone interested in any phase of the problems presented by the mentally deficient is welcome.

A Group for the Advancement of Psychiatry was organized in May 1946 by a number of members of the American Psychiatric Association in an effort to accelerate psychiatric progress. DR. WILLIAM MENNINGER is the chairman, and DR. HENRY BROSIN the secretary. The first formal meeting of the GAP was held November 4–6, 1946, in Rye, New York, where the main subject of study and discussion was the problem of psychiatry in medical education. The second meeting, held at Minneapolis June 30–July 2, 1947, was devoted principally to the subject of state mental hospitals.

The American Council on Education is arranging for the establishment of examining centers for the ninth annual administration of its National Teacher Examinations. The ACE welcomes the use of its examinations by any school system or college, provided assurance is given that the examination results will be used wisely in combination with other significant information concerning the prospective teacher.

Arrangements for the establishment of examining centers should be made by superintendents of schools and college officials before November 1, 1947. Address questions to David G. Ryans, Associate Director, National Committee on Teacher Examinations, American Council on Education, 15 Amsterdam Avenue, New York 23, New York.

As was announced in the May AMERICAN PSYCHOLOGIST, the Council of the British Psychological Soci-

ety is publishing a new journal, the *British Journal of Psychology* (*Statistical Section*) with Professor Sir CYRIL BURT and Professor GODFREY THOMSON as joint editors. Since the Council feels that it would be wise not to issue the *Journal* at regular intervals but when sufficient material has been received to make up one paper-bound issue, the first subscription will not be for a year necessarily, but for the first three or four numbers making a total of about 150 pages. It is hoped that the first issue will appear in the autumn of 1947. Subscriptions for £1, 10s. should be addressed to The Manager, University of London Press, Ltd., Little Paul's House, Warwick Square, London, E. C. 4.

In 1942 the English government appointed an Expert Committee to investigate and appraise the work of psychologists and psychiatrists in the Services and to consider applications to other purposes. The committee consisted of Sir WILSON JAMESON, Chief Medical Officer, Ministry of Health, Chairman; Sir SHELDON DUDLEY, Medical Director-General of the Royal Navy, Sir H. E. WHITTINGHAM, Director-General, Medical Service of the RAF; Sir A. HOOD, Director-General, Army Medical Services; Lord MORAN, Professor F. C. BARTLETT, University of Cambridge; Professor D. K. HENDERSON, University of Edinburgh, Dr. AUBREY J. LEWIS, Clinical Director, Maudsley Hospital, and Professor A. W. WOLTERS, University of Reading. The report of this committee has now been published and is available at the British Information Services, 30 Rockefeller Plaza, New York 20, New York.

The first issue of the *Canadian Journal of Psychology*, the official organ of the Canadian Psychological Association, appeared in March. The editor is JOHN A. LONG, the assistant editor, KATHLEEN M. HOBDAY, and the consulting editors, MARION MACDONALD, J. TUCKMAN, GORDON TURNER, W. H. D. VERNON, and D. C. WILLIAMS.

This journal will take the place of the *Bulletin* which the Association published previously, and will provide a much more adequate medium for the publication in Canada of scholarly and scientific psychological works.

The Federal Security Agency, U. S. Office of Education, Occupational Information and Guidance Service, Washington, D. C., prints a *Guidance Bibliography* which contains lists of books and pamphlets containing information of value to counselors. It is compiled by CLIFFORD P. FROELICH and WALTER J. GREENLEAF, and may be obtained by writing the above address.

Beginning this fall, Dr. MOLLY HARROWER will edit a publication entitled *An American Lecture Series in Psychology*. At first these monographs will be principally an organ for publications in clinical psychology and manuals of important tests, but the series will be extended in several directions in the coming years. They will be sold at 25 to 50 cents and will run 60 to 100 pages.

The *Journal of Child Psychiatry* is a new journal published by the Child Care Publications, New York. J. LOUISE DESPERT, FREDERIC J. FARNELL, C. M. LOUTTIT, BERNARD L. PACELLA, and LEO KANNER make up the editorial board. ERNEST HARMS is the managing editor. The journal offers its pages to all workers in the fields of neurology, psychiatry, and clinical psychology as applied to children and in the field of the institutional care of children. At intervals, three or four times a year, the accepted papers will be issued as a section of a more than 400 page volume.

Microfilm Service, a new affiliate of the American Council on Public Affairs, has been established for the purpose of reproducing and distributing microfilm versions of investigations in the physical and social sciences. Scholarly manuscripts on specialized subjects, documents of historical value, and out-of-print studies are being published under their auspices. Copies of these studies are available to leading academic libraries, research institutions, and scholars in general. Further information can be obtained from Microfilm Service, 2153 Florida Avenue, N.W., Washington 8, D. C.

The Illinois Association for Applied Psychology has named the following people to be the ANDREW W. BROWN Memorial Fund Committee: CHESTER W. DARROW, A. R. GILLILAND, MARGARET E. HALL, T. W. HARRELL, AUGUSTA T. JAMESON, FORREST A. KINGSBURY, HELEN L. KOCH, GRACE MUNSON, DOROTHY C. PAGE, FRANCES C. PERCE, MARTIN L.

REYMERT, PERRY ROHRER, PAUL SCHROEDER, DAVID SHAKOW, AGNES A. SHARP, L. L. THURSTONE and THELMA G. THURSTONE, with RICHARD M. PAGE as chairman. They will assist in establishing a suitable memorial to the contributions made by the late Dr. Brown to psychology as a profession. The present plan is to establish a student loan fund to aid graduate students in clinical psychology to continue their studies.

You are invited to send your contributions now to the chairman of the committee.

C. R. WILLIAMS has accepted an appointment as a member of the Board of Directors of the Music Research Foundation, Inc., a non-profit organization whose purpose is to study the use of music in the treatment of disease. They propose to initiate a program of scientific inquiry into the therapeutic use of music. Selected psychiatrists will conduct investigations into the kind of music which has most therapeutic value and the types of mental patient most responsive to its use. Through the use of fellowships, the Music Research Foundation will conduct and initiate special psychological studies. In addition, it will establish grants to compile present knowledge of the subject. The Executive Secretary of Music Research Foundation is located at 2909 Stanton Avenue, Silver Spring, Maryland.

The University of Virginia Hospital has a vacancy for a psychologist as assistant in a child guidance center. The salary ranges from $2832 to $3638.40. The requirements are an MA and some experience in child guidance clinic work. Address applications to Miss Linda L. Carter, Department of Neurology and Psychiatry, University of Virginia Hospital, University, Virginia.

A staff position in the Des Moines Child Guidance Center is open for a clinical psychologist. In addition to the conventional duties and requirements, experience in projective techniques and play therapy would be desirable. The salary is $3,000. Applications should be addressed to Allan H. Frankle, Director, Des Moines Child Guidance Center, Des Moines 8, Iowa.

A Senior Psychologist is desired to work in connection with the spastic children's program in the State of Washington. Located in Seattle, the psychologist will work under the medical supervision of the State Department of Health. Salary for this position ranges from $2880–$3420. The requirements for the position include an MA and two years of paid employment in clinical psychology. For further information, write the Washington State Personnel Board, 1209 Smith Tower, Seattle 4, Washington.

The Psychological Clinic of the University of Hawaii has an opening for a male psychologist, working largely with criminals and psychiatric cases. Depending on qualification, the appointments may be made as psychologist, salary range $4,980–$6,180; associate psychologist, $4,340–$5,280; or assistant psychologist, $3,780–$4,720, plus in each case a monthly bonus of $48.

Interested persons should write Dr. C. J. Herrick, Psychological Clinic, University of Hawaii, P. O. Box 18, Honolulu 10, T. H.

The Long Beach Mental Hygiene Clinic announces a vacancy for the position of clinical psychologist, preferably beginning in November. The salary is $3600 a year. Both adults and children are served by this agency, which is a member of the Community Chest. Interested psychologists should write Dr. John A. Russell, Director.

The Psychiatric Division of Kings County Hospital has vacancies for six more Staff Psychologists on its staff of twenty. Internships will be available in February and September of 1948; the existing vacancies are for positions at $3050 without maintenance and require two years of graduate study and three years of clinical experience. The positions are under psychiatric direction. Inquiries should be addressed to Dr. Solomon Machover, Chief Psychologist, Psychiatric Division, Kings County Hospital, Albany Avenue and Winthrop Street, Brooklyn 3, New York.

Rinehart Recommends:

Psychology of Childhood and Adolescence

COLE AND MORGAN

416 pages, $3.50

Experimental Foundations of General Psychology

WILLARD L. VALENTINE

432 pages, $2.50

Statistical Analysis for Students in Psychology and Education

ALLEN L. EDWARDS

360 pages, $3.50

Social Psychology of Modern Life

STEUART H. BRITT

562 pages, $4.00

Cats in a Puzzle Box

EDWIN R. GUTHRIE

67 pages, $1.50

Rinehart & Company, Inc.

232 MADISON AVENUE · NEW YORK 16, N. Y.

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 November, 1947 Number 11

In this Issue

The Problem of Psychotherapy: LAURANCE F. SHAFFER 459

Proceedings of the Fifty-Fifth Annual Business Meeting of the American Psychological Association, Inc., Detroit, Michigan: HELEN PEAK 468

APA Officers, Division Officers, Editors, Committees and Representatives, 1947–1948 511

Annual Report of the Executive Secretary: 1947: DAEL WOLFLE 516

A Simple, Inexpensive Classroom Demonstration of Concept Formation: CHARLES N. COFER and GEORGE HORSLEY SMITH 521

Comment 523

The Flesch and the Spirit: SAUL ROSENZWEIG 523

Further Comment: S. S. STEVENS AND GERALDINE STONE 524

Professor Taylor and the Problem of Notehand: F. L. WELLS 525

Must We Frighten Our Students?: JOHN D. BLACK 527

Across the Secretary's Desk 529

Psychological Notes and News 531

Convention Calendar 536

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879. Acceptance for mailing at special rate of postage provided for in section 538, Act of February 25, 1925, authorized August 6, 1947.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

DONALD G. MARQUIS
University of Michigan
Ann Arbor

President-elect

ERNEST R. HILGARD
Stanford University
California

Recording Secretary

HELEN PEAK
Connecticut College
New London

Treasurer

CARROLL L. SHARTLE
The Ohio State University
Columbus 10, Ohio

Executive Secretary

DAEL WOLFLE
1515 Massachusetts Ave., N.W.
Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER
ROBERT R. SEARS
THEODORE M. NEWCOMB

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.
Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.
Subscription: $5.00 (Foreign $5.25). Single copies, $1.25.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.
Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.
Subscription: $5.00 (Foreign $5.50). Single copies, $1.00

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, University of Illinois, Galesburg, Illinois. Contains noncritical abstracts of the world's literature inpsychology and related subjects; monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.
Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.
Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

THE PROBLEM OF PSYCHOTHERAPY[1]

LAURANCE F. SHAFFER

Teachers College, Columbia University

AMONG all the interests of clinical psychologists, one stands pre-eminent in 1947—the interest in psychotherapy. This present concern with psychotherapy does not arise because it is a new activity for psychologists, as some persons outside of the profession have assumed. Remedial work with persons was one of the original functions of the first psychological clinic when it was founded half a century ago, and through all of the years since that time, some psychologists have been engaged in therapeutic work, not only in the educational sphere, but also in the broader areas designated as social, emotional, and personal. The phenomenon today is not that *some* psychologists are doing therapy, but that much greater numbers of them are doing it. Opportunities to serve human welfare have increased greatly, because of the recognition by local and national agencies, and by other professions, of the role of the psychologist as a therapist.

As with all human events, the causes of the enhanced interest in therapy are complex and not a little obscure. In part, it is a symptom of a broad movement involving many professions that serve human interests. Psychiatry is experiencing the same revolution. We tend to think of all psychiatrists as therapists, but this has not always been so. Until quite recently, most psychiatrists were skilled primarily in diagnosis and institutional care, but now the dominant group in psychiatry has psychotherapy as its main interest. Social work and psychiatric nursing are also turning in this direction. In business and industry, personnel specialists are no longer occupied with selection and training alone but are interested in the total adjustments of workers as human beings. World War II brought all these professions together more intimately than in civilian life, and the resulting cross-fertilization has contributed markedly to the resultant flowering of the therapeutic attitude.

Psychologists have also turned to psychotherapy because of a growing dissatisfaction with their previous major function as mental testers. Even while the field of psychological measurement has become more complex and more entrancing, as tests have become more detailed, more diagnostic and more projective, it has remained unsatisfying for one reason alone. It does not cure. Psychologists are not satisfied with an adjunctive role, but want to get to the core of human betterment. Only psychotherapy offers this opportunity. Indeed, the contemporary reaction against testing may be going much too far, and it may be necessary to renew the emphasis on the positive values of objective psychological diagnosis.

A third reason for the growth of interest in therapy is the development of research techniques in this area. Research in therapy has had a circular effect. Originating from zeal, it has caused publication and discussion, has gained the respect of psychologists, and has therefore created ever widening circles of interest.

The spread of psychotherapy has given satisfactions but it has also brought problems. Questions have been raised as to who should be permitted to practice psychotherapeutic counseling. Should it be limited to psychiatrists; to the medical profession? Should legal certification or licensure be required of all who will engage in this practice so intimately bound to human welfare? How shall we train in the techniques of therapy the large numbers of students in clinical psychology that now flock to our universities and internship centers? Are the ethics of psychologists, until recently the academic ethics of scientists, sufficient for the more public responsibility that therapy implies? These questions show that the issue of psychotherapy has done much to precipitate the current professional problems of psychology, to which Committees and Boards of the American Psychological Association have devoted great attention during the past two years—problems of interprofessional relationships, of certification, of professional training and of ethics.

Important as these questions are, there is a more

[1] Address of the President of the Division of Clinical and Abnormal Psychology, American Psychological Association, Detroit, Mich., Sept. 9, 1947.

vital problem to be faced. This is the problem of the nature of the therapeutic process. How can we understand what takes place in the therapeutic interview? Why does it readjust the distressed person? Under what conditions is psychotherapy applicable? What techniques, applied in appropriately selected circumstances will produce predictable and effective results? The psychologist's major problem with respect to therapy is not that of the professional conditions of practice, but is the problem of understanding what therapy is and does. In short, we need an *explanation* of therapy that will point the way to testable hypotheses concerning its nature and its improvement.

The word *explanation* is a dangerous one. It must be recognized that there is no such thing as a final and single explanation of any natural phenomenon. Every explanation must explain something to a certain audience of persons and for a certain purpose. An explanation of life insurance, for example, that would be satisfactory if addressed to a group of salesmen for the purpose of making them able to sell more insurance might be quite unsatisfying if addressed to actuaries whose purpose would be to compute the appropriate premium rates for a type of policy. Still another explanation would serve to make a customer want to buy.

Psychology furnishes many examples of explanations that serve various audiences and purposes. William James' (*4*) classic chapter on "Habit" is still charming reading, and may serve to inform and edify the intelligent layman who would obtain no sense of explanation at all from the volumes by Hull (*3*), Skinner (*18*) or Tolman (*19*) on essentially the same topic. An explanation of learning that is serviceable to a fifth grade teacher who wants to improve the arithmetic performance of her forty children would not be useful for a research specialist.

Explanations of psychotherapy may well be examined in the light of their purposes. A suitable initial illustration may be found in an early psychoanaltyic explanation, first propounded but later denied by Freud. This example is appropriate because it shows the potential usefulness of an explanation, even though it may not be "true" (whatever that may mean). It can be cited without arousing defensive attitudes from any "school" of psychotherapy, since it has been discarded by its originator. This primitive Freudian theory held that psychotherapy is a process of catharsis, and that the patient is aided by getting him to recall forgotten memories of painful, emotionally toned experiences. The recollection of these memories was accompanied by a discharge of pent-up emotion, which came to be known as abreaction. Thus, the explanation advanced to account for the effect of psychotherapy was that it got this noxious, painful stuff out of the mind, from whence it issued with a loud explosion.

Was the theory of catharsis and abreaction a meaningless "explanation"? Not at all. It was a serviceable training device in the early days of psychoanalysis. Most significantly, it taught the early therapist that his client had to talk, preferably about painful experiences. It also prepared him for the client's emotional outbursts by indicating that they were a predictable part of the process of therapy then being used. Being forewarned, the therapist himself was not upset by the outburst of abreaction. A man unprepared for abreaction would have been alarmed by this turn of events, and might have taken flight into dermatology, or the study of visual configurations, or some other safer specialty, in order to preserve his own psychological balance! Far from being all "wrong," this discarded doctrine had a purpose when directed to an appropriate audience.

A similar function is served by certain aspects of later psychoanalytic theory. The concept of *resistances* gave the therapeutic worker patience in dealing with what common sense would have regarded as the stubbornness and uncooperativeness of his client. The theory of *transference* enabled him to regard calmly and dispassionately the emotional attachment, and the phases of emotional rejection that are induced by the psychoanalytic techniques of treatment. The concepts of resistance and transference serve as psychotherapy for the therapist himself. They make him feel secure against the surprises and conflicts of his task and protect him from feeling guilty about the disturbances he produces in the client.

A recent addition to the family of explanations of psychotherapy has been made by Rogers (*14*), in his nondirective approach. Like most psychotherapies, the nondirective methods seem first to have evolved gradually as a practice and only subsequently to have received a theoretical foundation. Nondirective therapy, however, has lately reached

the degree of maturity indicated by the evolution of a theory. A basic concept has been stated by Rogers, "... within the client reside constructive forces whose strength and uniformity have been either entirely unrecognized or grossly underestimated. ... in most if not all individuals there exist growth forces, tendencies toward self-actualization, which may act as the sole motivation for therapy. ... The individual has the capacity and the strength to devise, quite unguided, the steps which will lead him to a more mature and more comfortable relationship to his reality. ... All of these capacities ... are released in the individual if a suitable psychological atmosphere is provided." (*15*, p. 418)

This is an admirable explanation indeed, and nicely suited to its purpose. It persuades, even inspires, the nondirective counselor to refrain from coercion, advice, suggestion, and interpretation. Only a deep belief in the inner growth powers of the individual will keep the counselor in his nondirective role, supplying only the "atmosphere" of warmth, acceptance, and clarification. The theory is therefore an instructional method of great value, provided that the techniques that it inculcates are indeed effective ones.

This brief survey of some explanations of therapy shows that they operate principally on the level of action. These theories are methods of persuasion and methods of training. They are addressed to the audience of practicing therapists, and evoke the acceptance of the particular method that the theory commends. Furthermore, these theories have a personal value to the therapist that holds them. They give him a sense of security and protect him from conflicts of his own that might arise in the often uncomfortable interpersonal relationships of the therapeutic interview. Perhaps this last factor explains the warm, emotional, almost religious, attachment that each therapist has for his particular mode of explanation. The practicing therapist sees his theory not as an objective system of description, but as a code of values and a way of life.

An explanation that satisfies one purpose is often unsuited for other purposes. It is not surprising, therefore, that theories inspired by needs for indoctrination and instruction are not completely satisfactory for another need that for research, discovery, and development. Up to the present time, theories of psychotherapy have made relatively few contributions to research. The psychoanalytic theories have indeed stimulated some research studies of high quality, such as those of Miller (*8*) on conflict and Mowrer (*12*) on regression, but these experimenters have drawn more from the hypotheses of the general psychology of learning than from clinical sources. The studies of Masserman (*6*) with cats most nearly fulfill the criteria of constructive research based on psychoanalytic hypotheses, but the findings have not yet been applied to the improvement of the processes of actual therapy. The meager results found by Sears (*16*) in his painstaking survey of objective studies of psychoanalytic concepts illustrate the shortcomings of this point of view as a guide to discovery. Practical improvements in psychoanalytic technique have arisen from experience rather than from the interactions of hypotheses and experimental studies, as is demonstrated in the recent book by Alexander and French (*1*).

Psychologists associated with Rogers' nondirective approach have made some excellent research studies. The current wave of interest in psychotherapy is due in large part to the favorable response to these researches. Even here, however, the connection between the basic theories of the school and the experimental design of their studies seems somewhat vague. The experiments have not yet attempted to verify or disprove hypotheses deduced from the fundamental postulates of the theory, although some current studies are beginning to approach this objective.

It may be concluded that psychotherapy's great need for a substantial scientific basis is not fulfilled with entire adequacy by any of the existing systematic approaches. Despite the claims of the conflicting schools, the effectiveness of psychotherapy leaves much to be desired. At the best, it probably gives significant help to only forty to sixty per cent of the clients who are subjected to its procedures. Even this degree of curative power is not well defined because of the absence of quantitative measurements of the severity of disturbance present at the outset, and of the exact extent of improvement achieved at the end of the counseling experience. The need to improve our psychotherapy is so great that ultimate gain probably would accrue if all psychologists stopped the practice of therapeutic counseling for the next few years and devoted their entire energies to

research designed to increase the value of the process.

Several directions for research might be proposed. One obvious approach is the comparative evaluation of techniques now in use. We do not know, for example, the relative effectiveness of brief psychoanalysis *à la* Alexander, in comparison to nondirective counseling *à la* Rogers. Such comparisons of whole methods will probably be made, and may contribute by-products of permanent value. There is grave doubt, however, as to whether this is the most profitable orientation for research. First, the proponents of the various schools will have difficulty in agreeing on criteria of initial condition and of improvement. Second, existing whole theories are so emotionally toned and are so charged with personal value for their adherents that it is doubtful that anyone will be convinced. If there is anything that we know as clinical psychologists, it is the futility of attempting to resolve an emotional bias by intellectual argument. A third consideration is even more important. All entire methods, such as psychoanalysis and nondirective counseling, are complex. They have some elements in common and also differ in more than one respect. Experimental comparisons would therefore result either in a stalemate or in the partial vindication of one side or the other. Researches of this type would not be very likely to lead to new discoveries, to the detection of the particular excellences and faults of the methods, or to the synthesis of a new technique superior to all of its ancestors.

If existing theories are not suitable bases for research, an alternative must be sought to embark psychotherapy on its necessary voyage of discovery. A more profitable basis for the development of research might be the invention of new structures of theory. Such an attempt would start from a number of postulates and definitions, originating from observations and common points of agreement. From these postulates, testable hypotheses would then be proposed that might lead to the design of experiments. These hypotheses would indicate the direction of a series of research studies, perhaps starting with animal experiments, and with experiments on segments of human behavior that can be controlled and quantified. Eventually, promising developments would be tried in actual therapy, if the evidence suggests a high probability of benefit, and a low probability of harm, to the experimental clients.

The advantages of such an approach are numerous. The experimenter in psychotherapy would be freed from personal attachment to a preconceived frame of reference. His identification with his brain-child would be the weaker one of the scientist for his idea rather than the stronger bias of the practical worker for a system of concepts on which his security depends. Therefore, he would be more able to follow the experimental evidence to its conclusions, to discard without undue pain an hypothesis that is unrewarding, and to invent new ones that seem to encompass a larger sphere of observations.

Some attempts to define the postulates of psychotherapy in terms suitable for research have already been made. For example, the research and theoretical articles of Mowrer (*9*, *10*, *11*, *12*, *13*) have applied stimulus-response concepts to the study of adjustment mechanisms. The recent paper by Shaw (*17*) has extended this point of view to an explanation of some aspects of psychotherapy.

No single approach or unitary set of hypotheses is sufficient to attack the problem of psychotherapy, however, at our present stage of development. A dozen makers of theories are needed, each applying his hypotheses to experimental studies that will discover increasing numbers of relationships between observations. There is little danger that such a step would result in a number of warring little schools of thought, increasing the schism among psychologists. Instead, an anticipated outcome may be the elimination of dogmatic schools, as research findings take the place of contentions.

Of course, not all hypothetical structures are equally suitable for the advancement of psychotherapy through research. Some of the more obvious criteria for evaluating a theory may be suggested. First, the hypotheses should be in harmony with careful observations of the process. At least, no pertinent data concerning psychotherapy should be irreconcilably disharmonious with the theory. If a proposed theory cannot comprehend a commonly agreed observation, either the theory must be changed or the observation questioned. Second, the hypothesis should not have an immediate and pat explanation for every aspect of psychotherapy. At first glance, this seems contradictory to the first premise. But a theory that reveals an area of frank

ignorance is more likely to lead to an adventure of discovery than is one that smugly seems to account for all of the data. In fact, we are ignorant of many things about psychotherapy and an exposure of our gaps and shortcomings will be a primary objective of research. One of the faults of existing theories is that they claim to account for everything.

The third and most important requirement of a useful theory is that it must lead to the formulation of hypotheses for investigation that can be stated in testable terms and that lead to the design of experiments.

As an illustration of the type of hypotheses that may serve as a basis for research, a partial theory of psychotherapy will be presented. This theory is proposed with a sense of humility. It is not intended to attract adherents or to found another school. Its value as a basis for indoctrination, inspiration, and instruction is probably low. On the other hand, it coordinates several things that we know about psychotherapy and points to an area of ignorance that challenges investigation.

A TENTATIVE HYPOTHESIS FOR PSYCHOTHERAPY

An approach to research in psychotherapy might start with a simple observational definition of what occurs in the therapeutic interview. Counseling is a conversation between persons. Essentially, they communicate, mainly by the use of words, although other media of communication, including acting out (as in play therapy and psychodrama), gesture, facial expression, and tone of voice are also present. Whatever other responses occur in the therapeutic situation are evoked by these words or word-substitutes, and are functionally related to them. Movements, tensions, visceral and glandular changes, attitudes, postures, images, and subvocal verbalizations are among the secondary responses evoked by the interchange of words. This operational definition of the psychotherapeutic process in terms of observed happenings immediately suggests an investigation of the function of language in human adjustments.

There are many ways to study the operations of language. The analysis of the meanings of words in terms of semantics will be left, quite willingly, to others. There is also a behavioral approach to the functions of language. Talk may be used expressively, as when you say, "Ouch!" at the prick of a pin, or may give information, as when you say, "It is eight o'clock," although this apparently simplest use rarely occurs without some tinge of other functions. More importantly, language is used to control the behavior of others, in the guise of statements, requests, suggestions, and commands. Last, and here the enumeration reaches our present goal, language is used to control one's own behavior. This by no means novel concept suggests some relatively new hypotheses for an examination of psychotherapy.

In first condensed form, these hypotheses may be stated as follows:

1. An outstanding characteristic of the neurotic or maladjusted person is his inability to control his own behavior.

2. Normal persons control their behavior by the use of language signals, including the subvocal and the gestural.

3. It follows that psychotherapy can be approached as a learning process through which a person acquires an ability to speak to himself in appropriate ways so as to control his own conduct.

The objection might be raised that these hypotheses are not dynamic, that they do not take into account the importance of motivation in cause and effect relationships. The concept of a neurotic lacking voluntary control may even seem to have an antique and moralistic ring. You associate it with futile admonitions about lacking "will power." On the contrary, no neglect of the motivational basis of human conduct is implied. Normal and neurotic behavior are alike in being motivated. The proposition that persons are striving organisms, that their behavior is determined by the satisfaction of needs and the avoidance of annoying stimulation, arose from psychopathology but has been extended to include normal people as well. The striving or dynamic character of persons is a similarity between the normal and the neurotic. We are looking for differences.

In pursuing the implications of these hypotheses, a first step might be an examination of the voluntary control of behavior by normal persons. The subject has been neglected by psychology, possibly because it is entangled in the philosophical difficulties of "free will." Due to the paucity of previous work, voluntary behavior is a frontier of normal psychology, ripe for an approach by research methods.

It seems probable that most of normal human behavior is mediated through self-signaling processes.

If you have a letter in your hand and see a mail box, the external object, the mail box itself, does not stimulate the appropriate behavior automatically, even though you have learned how to use post boxes in this total context. Instead, the visual perception of the mail box arouses vocal, subvocal, gestural or subgestural responses, which in turn evoke the appropriate motor behavior. This is a psychological description of what happens when you mail a letter "voluntarily."

If an element of discrimination, choice, or conflict is involved in the situation, the self-signaling becomes even more important. You may recall, that is, tell yourself, that there are no more mail collections today. Then you represent by a word or gesture the location of the post office several blocks down the street. At this moment, you have stimuli present to permit a discrimination response. You discriminate or choose, and either place the letter in the box or walk to the post office. The discrimination response is made possible by the presence of other verbal or near-verbal cues, relating to the importance of the prompt dispatch of the letter, the competition of the time required to walk to the post office with other activities, and other pertinent determiners. As in laboratory experiments, the discriminative response is facilitated by the presence of a wealth of cues to distinguish the choices.

One function of verbalization in a discrimination or conflict situation, then, is to bring the necessary cues into the present. Mowrer and Ullman (*13*) emphasized this point in discussing their experiment on the time factor in integrative learning. No one can discriminate between a past stimulus and a present one. Voluntary behavior is a choice reaction among immediate stimuli, some or all of which are verbal.

Our knowledge of how voluntary behavior is learned by normal persons is limited. Descriptive studies of children have suggested that a child learns to do an act in response to his own verbal stimulation by first learning to do it when told by others. Little children often give their self-instruction aloud, so that the process can be detected readily. Adult self-signaling is done by silent implicit speech, or by even more abbreviated postural and gestural stimuli. There is some clinical evidence that the reinforcement of self-signaling requires a dependently trustful relationship between a child and his parent, who supplies rewards for self-controlled behavior. In normal development, verbally-stimulated responses are reinforced more strongly and more frequently than are other types of reactions, so that voluntary control is learned.

There is also a modest amount of experimental evidence on the acquisition of voluntary control. Examples are the experiments of Menzies (*7*) on the conditioning of the voluntary control of an autonomic response, and of Davis (*2*) on the role of muscular tensions in thinking. On the whole, however, we are all too ignorant of how normal people acquire the important ability to regulate their conduct by means of their own signals.

An outstanding characteristic of maladjusted and neurotic persons is their inability to control their own behavior. We can picture some phobic person avoiding the mail box even when he "wants" to mail a letter; a sufferer from obsessive indecision pacing back and forth unable to decide between the box and the post office; a compulsive making sure that he has slammed the lid of the box exactly seven times, no more, no less. The neurotic's lack of self-control is also seen in more realistic clinical pictures: in anxiety neuroses, hysterias, so-called nervousness, phobias, and compulsions, and even in the ordinary defense mechanisms of compensation, rationalization, and the like.

Of course, the neurotic is not unable to respond to some kinds of inner signals. On the contrary, his anxiety is probably stimulated by visceral and proprioceptive cues. If a man has a phobia for cats, it is less the objective cat that induces his anxiety, than it is an inner pattern of tensions. Control, then, does not depend on the presence or absence of self-stimulation, but on the character of the stimuli and on the discriminative response that is made to them.

The psychoneurotic's lack of self-control has been recognized in the past, but it has been described in rather vague terms that have not encouraged experimental investigation. The most common statement, so widely used that its origin escapes detection, holds that the psychoneurotic lacks integration or wholeness of behavior. A recent variant is Lecky's (*5*) theory that the maladjusted personality does not have self-consistency. The psychic energy theories, based on the observed weakness and futility of psychoneurotic behavior, state that the ego lacks the

strength required for dealing with reality. These theories have some explanatory value. Like all scientific generalizations, they are short formulas that draw together certain observed data. But they are lacking in another requisite of scientific hypotheses, in that they do not point the way to discovery. How shall we improve integration, or self-consistency, or ego-strength? More specific hypotheses are needed.

In terms of the hypotheses based on the functions of language in self-control, two characteristics of neurotic behavior may be distinguished. First, the neurotic does not respond with language to one or more significant aspects of his total situation. He represses, or shows resistance to the verbal representation of his problems, because recall is painful or conflict-producing. His inhibition of verbal responses has partial adjustive value. But, it prevents him from having available the cues on which to base a discriminative, voluntary, or normal response. This aspect of neurotic behavior is well recognized.

Second, the maladjusted person lacks control because the voluntary responses have not been reinforced with respect to the self-signal. It is common observation that the neurotic often "knows what he ought to do," but feels that he "is unable to do it." Something has prevented the establishment of connections between his own words and thoughts and his effective behavior.

The purposes of psychotherapy now become clear. They are, first, to induce the client to represent verbally the cues that he needs for normal voluntary behavior, and second, to reinforce appropriate responses to these verbal cues.

Existing systems of psychotherapy have been most successful in meeting the first requirement. Psychoanalytic therapy uses relaxation, free association, association with dreams, interpretation, the establishment of transference, and other techniques, to overcome resistances and encourage verbalization. Nondirective counseling has found that simple acceptance, evidence of warm interest, and reflection and clarification of feelings are serviceable for the same purposes. All of these techniques induce the verbalization of previously inhibited material. In many instances, they lead to "insight," a concept that is often regarded mystically, but that can be defined operationally as a verbalization of the person's problems and of the relationships between them.

Although present methods are reasonably satisfactory for bringing about verbalization and insight, improvements might be sought. Further research may isolate the elements of these techniques, and vary them systematically so that the most effective composite is discovered. A method for inducing a client to talk must be judged not only by the ease with which it leads to verbalization, but also by its effect on the rest of the therapeutic process.

Insufficient attention has been paid to the second main requirement of psychotherapy, that of reinforcing responses to the client's own verbal cues. We have learned the first step of wisdom in recognizing that the stimuli to voluntary behavior must be the client's own, and not the therapist's. If you use suggestion or advice to solve a client's problems you are teaching him to respond to, and to depend on, your words rather than his words. The result may be the quick solution of one problem, but at the cost of establishing a dependence that will bring him running back to you when the next conflict arises.

Among current therapies, that of Rogers' holds that independence, planning, and voluntary behavior will arise spontaneously following the expressive features of the counseling. The counselor has only to provide the permissive "atmosphere" and the client's "growth" will take place. Unfortunately, "atmosphere" and "growth" are nonexperimental terms in this context. It is probable that the permissive and nonpunishing techniques of nondirective therapy do help some clients learn to make responses to their own words. If so, this is an incidental outcome, which rational therapy should regard as an intentional and major aim.

Psychoanalysis long has recognized something akin to the development of voluntary behavior. Freud himself wrote that the aim of therapy was ". . . to uncover repressions and replace them by acts of judgment . . ." Translating psychoanalytic practice into psychological concepts, the establishment and working through of transference might be regarded as a process of making the client repeat those stages of childhood that normally result in the acquisition of voluntary behavior. Just as a child acquires voluntary action through his dependence on a parent and through the rewards given by parents, so the person being psychoanalyzed might learn

PROCEEDINGS OF THE FIFTY-FIFTH ANNUAL BUSINESS MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC., DETROIT, MICHIGAN

September 10, 1947

REPORT OF THE RECORDING SECRETARY

HELEN PEAK

Connecticut College

THE annual meeting of the Council of Representatives of the American Psychological Association was called to order at 8:15 P.M., Thursday, September 10, 1947, by President Carl R. Rogers in the English Room of the Statler Hotel. The Board of Directors of the Association had been in session for two and one-half days for discussion and formulation of the agenda.

A. REPORTS TO THE COUNCIL OF REPRESENTATIVES

1. The Council voted to approve the minutes of the meeting of the Council of Representatives on September 4, 1946, as printed in the AMERICAN PSYCHOLOGIST, 1946, **1,** 493–532.

2. The Council voted to approve the minutes of the meeting of the Board of Directors on March 28–30, 1947 (see page 480, Report of the Recording Secretary to the Council of Representatives).

3. The Council approved the following actions taken since the March meeting of the Board:

a. Mrs. Janet Krueger was authorized to enter the safety deposit box held by the American Psychological Association.

b. Nominations for Treasurer of the Association were solicited by mail ballot sent to the Board of Directors.

c. The Board approved the Recording Secretary's Minutes of the meeting the Board held at Ann Arbor, Michigan, March 28–30.

d. The Board approved the report of the Recording Secretary to the Council of Representatives.

e. On a mail ballot the Board of Directors elected George K. Bennett to replace Willard L. Valentine as an American Psychological Association Representative to the Division of Anthropology and Psychology of the National Research Council for the period July 1, 1947, to June 30, 1950.

f. The President appointed the following persons to the Committee on Training in Clinical Psychology which was created by the Board in March: David Shakow, *Chairman*, E. R. Hilgard, E. Lowell Kelly, Bertha Luckey, R. Nevitt Sanford, Laurance F. Shaffer.

g. The President appointed the following persons to the Committee on Ethical Standards for Psychology which was created by the Board in March: E. C. Tolman, *Chairman*, John C. Flanagan, Edwin Ghiselli, Nicholas Hobbs, Helen Sargent, Lloyd Yepsen.

h. The President appointed J. McV. Hunt as Chairman of the Committee on Relations with the Social Work Profession which was created by the Board in March. The membership will be appointed from nominations made by interested divisions.

i. The President made the following special appointments during the past year: (1) Phyllis Blanchard, Francis Irwin, and Miles Murphy as delegates to the meeting of the American Academy of Political and Social Science in Philadelphia; (2) Lloyd Yepsen and Dael Wolfle as delegates to the Attorney-General's Conference on Juvenile Delinquency; (3) E. Lowell Kelly and Dael Wolfle as representatives to the Inter-Society Committee on a National Science Foundation; (4) Helen Peak as delegate to the inauguration of Dr. Rosemary Park as President of Connecticut College; (5) Dael Wolfle as delegate to the Department of State meeting on American Foreign Policy; (6) Raymond G. Kuhlen as delegate to the installation of Dr. Paul H. Appleby as Dean of the Maxwell Graduate School of Citizenship and Public

Affairs, Syracuse University; (7) Carlyle F. Jacobsen and David Shakow as delegates to the conference preparatory to the International Congress on Mental Health; (8) Joseph E. Runkel as delegate to the inauguration of President Nelson Vance Russell of Carroll College; (9) Robert H. Seashore as delegate to the installation of George Stoddard as President of the University of Illinois; (10) Arnold H. Hilden and T. H. Howells as delegates to the Mountain-Plains Regional Conference on UNESCO; (11) Morris S. Viteles and David Krech as delegates to the National Conference on UNESCO; (12) C. H. Smeltzer, Miles Murphy, and Frank P. Bakes as delegates to the 51st Annual Meeting of the American Academy of Political and Social Sciences; (13) Jay L. Otis as delegate to the 74th Annual Meeting of the American Public Health Association; (14) Elizabeth F. Moller as delegate to the inauguration of Martha Lucas as President of Sweet Briar College; (15) H. M. Halverson as delegate to the centennial celebration of the founding of MacMurray College; (16) Roger Barker as delegate to the inauguraton of Howard B. Jefferson as president of Clark University; (17) John G. Darley as delegate to the National Conference on Veterans' Affairs sponsored by the National Social Welfare Assembly; (18) C. O. Weber as delegate to the inauguration of Richard L. Greene as President of Wells College; (19) Adelbert Ford as delegate to the inauguration of Martin Dewey Whitaker as President of Lehigh University.

4. The Council voted that the report of the Treasurer for 1946 be accepted and printed in the Proceedings (see page 484).

5. The Council adopted the following resolution on the death of Willard L. Valentine, Treasurer of the American Psychological Association:

> The officers, the Board of Directors, and the Council of Representatives of the American Psychological Association desire to record their deep feeling of loss in the death of Willard L. Valentine, Treasurer of the Association. Since 1937 when he was elected to this office, he served generously and effectively in the management of the affairs of the Association during a period of rapid growth and change. The substantial financial balance of the Association and the increased circulation and influence of the Association's journals are in great measure the result of Dr. Valentine's wisdom and energy.

6. The President announced the election of Ernest R. Hilgard as President-elect.

7. The President announced the election of the following Regional Representatives:

Representative of Region II (1947–50): Gardner Murphy.

Representative of Region V (1947–50): Donald K. Adams.

Representative of Region VIII (1947–50): Jean W. Macfarlane.

8. It was voted on recommendation of the Board of Directors that in cases where candidates for American Psychological Association offices or for the Board of Directors decline to accept an office after election, the ballots be redistributed after withdrawing the names of candidates who have refused to accept election.

9. The Executive Secretary announced that Robert R. Sears and Theodore M. Newcomb were elected to the Board of Directors for the term 1947–50.

B. CHANGES IN AMERICAN PSYCHOLOGICAL ASSOCIATION MEMBERSHIP

1. The Recording Secretary announced the following deaths of members reported since the 1946 meeting:

FELLOWS

H. Austin Aikins, Nov. 13, 1946
W. C. Bagley, July 1, 1946
Henry Beaumont, Feb. 21, 1947
Andrew Wilson Brown, Dec. 19, 1946
Charles H. Judd, July 18, 1946
Kurt Lewin, Feb. 11, 1947
William Moulton Marston, 1947
Franklin C. Paschal, Sept. 12, 1947
E. C. Rowe, Dec. 31, 1946
Henry A. Ruger, July 17, 1947
George S. Snoddy, June 29, 1947
Lorene Teegarden, Nov. 1, 1946
Willard Lee Valentine, April 3, 1947

ASSOCIATES

Irving A. Barrett, July 18, 1945
Ray D. Chard
William M. Danner, Jr., Dec. 20, 1946
John B. Geisel, Sept. 1946
A. B. Hoskins, March 20, 1947

Winifred Kittredge
Herbert I. Meyer
James A. Reeves, March 7, 1947
Stella Hamlin Schultz, July 22, 1947

2. The Executive Secretary announced that the following 17 persons had been granted status as Life Members since the 1946 meeting:

Grace E. Bird
Trigant Burrow
Harvey A. Carr
Walter F. Dearborn
Mrs. Frank B. Gilbreth
Henry H. Goddard
William C. Gore
David S. Hill
Buford J. Johnson
Mabel C. Williams Kemmerer
Dr. Adolf Meyer
Walter B. Pillsbury
Louise E. Poull
James P. Porter
Stella B. Vincent
Karl T. Waugh
Jean Weidensall

3. The Executive Secretary announced the following 61 resignations since the 1946 meeting:

FELLOWS

Dr. E. Lee Vincent

ASSOCIATES

Francis J. Affleck
W. W. Martin Babb
Phyllis E. Bailey
Lauren Benson
Marion H. Birmingham
Robert Irwin Blakey
Peter Blos
Marjorie Bremner
Bertha Brewer
Theodore Carlton
Barry Casper
Elizabeth Tierney Degenhardt
H. T. Diehl
Bertram M. Drucker
Mary Elizabeth Evans
Lloyd G. Everest
Alice Friedman
Anne Marriott Frogue
William W. Giles, Jr.
Meyer L. Goldman
Marianne McNeill Gregory
Ruth Hagenstein
Harry L. Hawkins
Carroll B. Hodges
Hilda M. Holmes
William H. Janes
Brother Boniface Joseph, F. S. C.
Edward I. Kelly
George W. Kisker
Harry Frank Koob
Geraldine J. Korda
William S. Larson
Verne W. Lyon
S. W. Mackie
Dorothy E. Mattia
Robert B. Miller
C. H. Popenoe
A. S. Raubenheimer
William P. Reed
F. Leonard Reinwald
Henry J. Robitaille
David G. Salten
Byron C. Sarvis
Grace Dorr Saslavsky
Genevieve Scott
Demitri B. Shimkin
Harry Andrew Shuder
Sidney M. Simmons
J. Roy Smith
Janet I. Snelling
Jeanne Culver Sowiski
Robert H. Stanley
F. Jackson Stoddard
Lewis Gordon Stone
Ethelbert Thomas, Jr.
Mrs. Hoyt Trowbridge
N. J. Van Steenberg
Rebecca Shannon Walborn
Sarah M. Watson
Helen Wauters

4. The Council voted to elect as Fellows the following 197 persons who had been nominated by a division, who met the requirements stated in the By-Laws, and who have had at least four years of experience since receiving the doctoral degree. Following the name of each new Fellow is the title conferred upon him by the division which recommended his election. Two or more titles are given for Fellows recommended by two or more divisions.

Abelson, Harold H. — Fellow in Clinical Psychology
Adkins, Dorothy C. — Fellow in Evaluation and Measurement
Allen, Clinton M. — Fellow in Clinical Psychology
Alper, Thelma G. — Fellow in Clinical Psychology
Anderson, Carl Ludwig — Fellow in Clinical Psychology
Baker, Lawrence M. — Fellow in General Psychology
Balinsky, Benjamin — Fellow in Clinical Psychology
Bartlett, Neil Riley — Fellow in Theoretical-Experimental Psychology, Fellow in Physiological and Comparative Psychology, Fellow in Military Psychology
Beier, Delton Clifford — Fellow in Clinical Psychology, Fellow in the Division of Counseling and Guidance
Bender, Wilson R. G. — Fellow in Military Psychology
Berg, Irwin August — Fellow in Clinical Psychology
Berger, Evelyn Miller — Fellow in Consulting Psychology
Berrien, Frederick Kenneth — Fellow in General Psychology
Bittner, Reign H. — Fellow in Military Psychology
Blodgett, Hugh C. — Fellow in Physiological and Comparative Psychology
Bordin, Edward S. — Fellow in Evaluation and Measurement, Fellow in Clinical Psychology, Fellow in Counseling and Guidance
Brener, Roy — Fellow in Clinical Psychology
Brenman, Margaret — Fellow in Clinical Psychology
Brewer, Joseph Everett — Fellow in Clinical Psychology
Brogden, Hubert E. — Fellow in Military Psychology
Bronfenbrenner, Urie — Fellow in Clinical Psychology
Burack, Benjamin — Fellow in Clinical Psychology
Burns, Zed H. — Fellow in Counseling and Guidance
Buzby, Dallas Eyre — Fellow in Clinical Psychology
Calabresi, Renata — Fellow in Clinical Psychology
Campbell, Helen Melissa — Fellow in Clinical Psychology
Carroll, John B. — Fellow in Evaluation and Measurement
Carter, Launor F. — Fellow, Society for the Psychological Study of Social Issues
Challman, Robert Chester — Fellow in Clinical Psychology
Chase, Wilton P. — Fellow in the Division of Psychologists in Public Service

Coffey, Hubert Stanley	Fellow in Clinical Psychology
Coleman, John H.	Fellow in Consulting Psychology
Colm, Hanna (Mrs.)	Fellow in Consulting Psychology
Coville, Walter Joseph	Fellow in Clinical Psychology
Craft, Jesse Herman	Fellow in Clinical and Abnormal Psychology
Crissy, William J. E.	Fellow in Counseling and Guidance
Curtis, Henry Stoddard	Fellow in Clinical Psychology
Devening, Jean McQueen	Fellow in Consulting Psychology
Donahue, Wilma Thompson	Fellow in Clinical Psychology
Ekstein, Rudolf	Fellow in Clinical Psychology
Emme, E. E.	Fellow in the Teaching of Psychology
Faterson, Hanna Fay	Fellow in Clinical Psychology
Feder, Daniel D.	Fellow in Counseling and Guidance
Fischer, Liselotte K.	Fellow in Clinical Psychology
Fletcher, Frank M.	Fellow in Military Psychology
Flory, Charles D.	Fellow in Clinical Psychology, Fellow in Consulting Psychology
Fosberg, Irving Arthur	Fellow in General Psychology
Garrett, James Francis	Fellow in Clinical Psychology
Glenn, William Darby, Jr.	Fellow in Clinical Psychology
Granich, Louis	Fellow in Clinical Psychology
Grauel, Claire Kearse	Fellow in Clinical Psychology
Graver, Harold A.	Fellow in Consulting Psychology
Greene, Janet S.	Fellow in Consulting Psychology
Guiles, Austin Philip	Fellow in Consulting Psychology
Hackman, Roy Bamford	Fellow in Counseling and Guidance
Hadley, John Millard	Fellow in Clinical Psychology
Hahn, Milton Edwin	Fellow in Counseling and Guidance
Hamilton, Portia G.	Fellow in General Psychology
Hansburg, Henry G.	Fellow in Clinical Psychology
Harris, Dale Benner	Fellow in the Division on Childhood and Adolescence, Fellow in Clinical Psychology
Harris, Robert E.	Fellow in Clinical Psychology
Haslerud, George M.	Fellow in Physiological and Comparative Psychology, Fellow in Theoretical-Experimental Psychology
Hayes, Samuel P.	Fellow, Society for the Psychological Study of Social Issues
Heathers, Glen Leon	Fellow in Abnormal Psychology
Herrick, Colin James	Fellow in Clinical Psychology
Heston, Joseph Carter	Fellow in Clinical Psychology
Hirning, J. L.	Fellow in Clinical Psychology
Hoffman, Arthur Christian	Fellow in General Psychology
Hovey, Henry Birnet	Fellow in Clinical Psychology
Humber, Wilbur James	Fellow in Consulting Psychology
Hunt, Howard Francis	Fellow in Clinical Psychology
Jacobsen, O. Irving	Fellow in General Psychology
Jenkins, Marion Pauline	Fellow in Clinical Psychology
Jones, Marshall R.	Fellow in Clinical Psychology
Kaplan, Oscar J.	Fellow in Abnormal Psychology, Fellow in the Psychology of Maturity
Keller, Margaret E.	Fellow in Clinical Psychology
Kelly, Elizabeth Mary	Fellow in Clinical Psychology
Kendler, Howard Harvard	Fellow in Theoretical-Experimental Psychology
Killinger, George Glenn	Fellow in Clinical Psychology
Kogan, Kate Levine	Fellow in Clinical Psychology
Kotkov, Benjamin	Fellow in Clinical Psychology
Krugman, Judith I.	Fellow in Clinical Psychology
Krugman, Morris	Fellow in Clinical Psychology
Lacey, Oliver Lilburn	Fellow in Theoretical-Experimental Psychology
Lantz, C. M. Beatrice	Fellow in Clinical Psychology
Lash, Frederick Merrick	Fellow in Clinical Psychology
Lawrence, Merle	Fellow in Military Psychology
Layman, Emma McCloy	Fellow in Clinical Psychology
Ledgerwood, Richard Carnes	Fellow in General Psychology
Lehner, George F. J.	Fellow in General Psychology
Leiter, Russell G.	Fellow in Clinical Psychology, Fellow in Counseling and Guidance
Levi, Joseph	Fellow in Clinical Psychology
Levine, Albert J.	Fellow in Clinical Psychology
Lindner, Robert M.	Fellow in Clinical Psychology, Fellow in Consulting Psychology
Lippitt, Ronald	Fellow, Society for the Psychological Study of Social Issues
Locke, Bernard	Fellow in Clinical Psychology
Lodge, George Townsend	Fellow in Clinical Psychology
Lovell, George D.	Fellow in Abnormal Psychology
Machover, Solomon	Fellow in Clinical Psychology
MacPhee, Halsey M.	Fellow in General Psychology
Malmo, Robert Beverley	Fellow in Clinical Psychology
Marks, Eli S.	Fellow, Society for the Psychological Study of Social Issues
Marquit, Syvil	Fellow in Consulting Psychology
Martin, Hermon Wilkes	Fellow in Clinical Psychology
Mathews, Walter Mason	Fellow in Clinical Psychology
Mays, Luther L.	Fellow in Clinical Psychology
McCandless, Boyd Rowden	Fellow in Clinical Psychology
McCann, Willis Harrison	Fellow in Abnormal Psychology

McClelland, David Clarence	Fellow in Theoretical-Experimental Psychology
McClintock, James Alfred	Fellow in the Teaching of Psychology, Fellow in the Division of Counseling and Guidance
McGehee, William	Fellow in Military Psychology
McGinnis, Esther	Fellow in Clinical Psychology
McKinnon, Kathern M.	Fellow in Clinical Psychology, Fellow in Consulting Psychology
McQuitty, Louis L.	Fellow in Military Psychology
Messerschmidt, Ramona	Fellow in Clinical Psychology
Meyer, Edith	Fellow in Clinical Psychology
Meyer, Mortimer Meier	Fellow in Clinical Psychology
Miller, James Grier	Fellow in Clinical Psychology
Misbach, Lorenz	Fellow in Abnormal Psychology
Morris, Charles McDowell	Fellow in Clinical Psychology
Morrow, Robert S.	Fellow in Counseling and Guidance
Morsh, Joseph Eugene	Fellow in General Psychology
Morton, James Thomas, Jr.	Fellow in Clinical Psychology
Mosier, Charles I.	Fellow in Evaluation and Measurement
Mueller, Alfred Don	Fellow in Clinical Psychology
Neff, William D.	Fellow in Theoretical-Experimental Psychology, Fellow in Physiological and Comparative Psychology
Odom, Charles Leonard	Fellow in Clinical and Abnormal Psychology
Older, Harry Jay	Fellow in Military Psychology
Orlansky, Jesse	Fellow in General Psychology
Ortleb, Ruth Virginia	Fellow in Clinical Psychology
Pace, C. Robert	Fellow in Evaluation and Measurement
Page, Howard E.	Fellow in Military Psychology
Porter, E. Louise H.	Fellow in Clinical Psychology
Rabin, Albert	Fellow in Abnormal and Clinical Psychology
Ramsdell, Donald A.	Fellow in Clinical Psychology
Ramsey, Glenn Virgil	Fellow in Clinical Psychology
Reichenberg-Hacket, Wally	Fellow in Clinical Psychology
Rhinehart, Jesse Batley	Fellow in Clinical Psychology
Robinson, Mary Frances	Fellow in Abnormal Psychology
Rogers, Lawrence S.	Fellow in the Division of Psychologists in Public Service
Rogers, William White	Fellow in General Psychology
Ross, Sherman	Fellow in Physiological and Comparative Psychology, Fellow in Military Psychology
Saffir, Milton A.	Fellow in Clinical Psychology
Sarason, Seymour Bernard	Fellow in Clinical Psychology
Scheerer, Martin	Fellow in Clinical Psychology
Schoenfeld, William N.	Fellow in Theoretical-Experimental Psychology
Schumacher, Audrey Sims	Fellow in Clinical Psychology
Scott, John P.	Fellow in Physiological and Comparative Psychology
Sears, Pauline Snedden	Fellow in Clinical Psychology
Shacter, Helen	Fellow in Clinical Psychology, Fellow in Consulting Psychology
Sherlock, Joseph Russell	Fellow in the Teaching of Psychology
Sherwin, May Reynolds	Fellow in Consulting Psychology
Shotwell, Anna M.	Fellow in Clinical Psychology
Showalter, Donald F.	Fellow in General Psychology,
Skodak, Marie Paula	Fellow in the Division on Childhood and Adolescence, Fellow in Clinical Psychology, Fellow in Consulting Psychology, Fellow in Counseling and Guidance
Smith, Mary Katherine	Fellow in Clinical Psychology
Snyder, William Ulrich	Fellow in Clinical Psychology
St. Clair, Walter Francis	Fellow in Clinical Psychology
Stofflet, Elliott Holmes	Fellow in Clinical Psychology
Taylor, Franklin V.	Fellow in Military Psychology
Thomson, Ruth Haines	Fellow in Clinical Psychology
Tomkins, Silvan Samuel	Fellow in Clinical and Abnormal Psychology
Treacy, John P.	Fellow in Clinical Psychology
Tresselt, Mary Elizabeth	Fellow in Theoretical-Experimental Psychology
Triggs, Frances Oralind	Fellow in Clinical Psychology
Tyson, Robert	Fellow in the Teaching of Psychology
Vaughan, Wayland F.	Fellow, Society for the Psychological Study of Social Issues
Verplanck, William Samuel	Fellow in Theoretical-Experimental Psychology, Fellow in Physiological and Comparative Psychology, Fellow in Military Psychology
Voorhis, Thelma Grady	Fellow in Clinical Psychology
Voth, Albert Cornelius	Fellow in Clinical Psychology
Wallace, Ramona	Fellow in Clinical Psychology
Wallar, Gene A.	Fellow in Consulting Psychology
Waskom, Hugh L.	Fellow in Clinical Psychology
Watkins, John Goodrich	Fellow in Clinical Psychology
Watson, Gladys H.	Fellow in Consulting Psychology
Watson, Robert Irving	Fellow in Clinical Psychology
Webb, Marvin William,	Fellow in Clinical Psychology, Fellow in Consulting Psychology
Wegrocki, Henry Joseph	Fellow in Abnormal and Clinical Psychology, Fellow in Consulting Psychology
Weitzman, Ellis	Fellow in Consulting Psychology

Wesley, S. Medford	Fellow in Clinical Psychology
Wessell, Nils Yngve	Fellow in Clinical Psychology, Fellow in Consulting Psychology
Wherry, Robert J.	Fellow in Evaluation and Measurement
White, Robert W.	Fellow in Clinical Psychology
Wilkening, Howard Everett	Fellow in Consulting Psychology
Williams, Cornelia Taylor	Fellow in Counseling and Guidance
Williams, Gertha	Fellow in Clinical Psychology
Wingfield, Robert Cornelius	Fellow in General Psychology
Winter, Leopold	Fellow in Clinical Psychology
Wittenborn, John Richard	Fellow in Clinical Psychology
Wolf, S. Jean	Fellow in Clinical Psychology
Wolfe, Lillian S.	Fellow in Clinical Psychology
Wyatt, Frederick	Fellow in Clinical Psychology
Yates, Dorothy Hazeltine	Fellow in Clinical Psychology
Young, Florene M.	Fellow in Clinical Psychology
Zander, Alvin	Fellow, Society for the Psychological Study of Social Issues
Zawadzki, Bohdan	Fellow in Clinical Psychology
Zizmor, Jesse	Fellow in Abnormal Psychology

5. The Executive Secretary announced the confirmation by divisions of the following 13 Fellows elected by the Council in September 1946:

Brighouse, Gilbert	McQuitty, Louis L.
Bromer, John A.	Patton, Robert A.
Chapanis, Alphonse	Pfaffmann, Carl
Drake, Lewis E.	Prentice, William C. H.
Driscoll, Gertrude P.	Thompson, George G.
Huntley, Charles W.	Triggs, Frances Oralind
Israeli, Nathan	

6. The Executive Secretary announced the election of the following 467 new Associates by the Board of Directors:

Aaron, Sadie N.	Baker, Katherine Eleanor
Aarons, William Bernard	Baird, Louise Claire
Aidman, Ted	Ball, Helena Vera K.
Alden, Priscilla Jean	Balz, Albert G. A.
Allessi, Salvatore Louis	Barclay, Gordon Lanier
Amsel, Abram	Barnard, Maryline
Anderson, Helen Joan	Barnowe, Theodore Joseph
Anderson, James Melville	Barship, Clementine S.
Angoff, William Herbert	Bass, Libby Galst
Appel, Mary Herzog	Battison, Cicely Church
Applezweig, Mortimer Herbert	Bear, Firman Edward, Jr.
Arbitman, Herman D.	Beck, Celia Frances
Axelrod, Philip	Beck, Harriett (Behm) Kraemer
Baker, Howard D.	Beery, John Replogle
Beier, Helen	Corbett, Helen E.
Bell, Martha Corinne	Corley, Robert R.
Belyea, Edwin Stephens Waycott	Cottle, William C.
Bergman, Paul	Cowen, Anna Wunsch
Berlow, Nathan	Cox, Carolyn
Berman, Isabel R.	Crago, Alfred
Bernauer, Margaret Mary	Curtis, Edward Evert
Bernstein, Arnold	Dales, Orrin Penfield
Beum, Corlin O., Jr.	D'Amico, Angelo Michael
Bitner, Harold M.	Darling, Wesley Chester
Black, John Davies	Daum, Henry F.
Blackwell, Amelia Alvord	Davenport, Roy Kirklin
Blackwell, Ernestine B.	Davidon, Robert S.
Bloom, Royal Ferdinand	Davis, Dwight D.
Blum, Lucille Hollander	Davis, Edwin Wallace
Boger, Roy Garland	Delp, Harold A.
Boland, Ruth Frances	Derthick, Charles Henry
Boraas, Harold Orlando	Donovan, Margaret Rita
Bosquet, Kennison Tilden	Dow, Thomas William
Bowman, Paul Hoover	Dressel, Paul L.
Boxer, Nathan	Drews, Elizabeth Monroe
Bradley, Elizabeth Alta	Dugan, Willis Edwin
Brasell, Waymah Norris	Dukes, William Franklin
Braun, Roslyn Rotkin	Dumas, Lenore Ruth
Brodbeck, Arthur Joseph	Dungan, Irvine Mitchell
Brown, Betty B.	Dunn, Frances Elliot
Brown, Carl R.	Earhart, Richard H.
Brown, Hugh Stuart	Eckman, Claude Franklin
Brown, R. Elizabeth	Edelmann, Anne Miriam
Browne, Catherine Sullivan	Eimicke, Victor William
Brundage, Geraldine Babler	Eissler, Kurt Robert
Bry, Ilse	Elias, Gabriel
Bry, Mae G.	Elliott, Margaret Marion
Bryan, Laurence Leonard	Erikson, Charles Walter
Bubeck, Allan Franklin	Ethier, Wilfrid
Bullock, Donald H.	Failor, Clarence W.
Buros, Oscar K.	Fassett, Katherine Knight
Burros, Raymond H.	Feinberg, Mortimer
Buttimore, Dennis J.	Feinberg, Richard
Caldwell, Willard Edmund	Fensterheim, Herbert
Carstater, Eugene Debs	Feronte, Nicholas C.
Carter, Gerald C.	Fettus, George Hamilton, Jr.
Charen, Claire Lorraine	Ficca, Sylvestor Charles
Chassell, Marian Arabella	Ficks, David Bruce
Chevrier, Jean Marc	Filmer-Bennett, Gordon Thomas
Christensen, Arden Hans	Fine, Sidney Albert
Christensen, Julien Martin	Fisher, Granville Chapman
Christensen, Thomas Edison	Fleming, Edith Endsley
Clubb, Gertrude E.	Foley, Lloyd
Cohen, David	Ford, Frances Marion
Cohen, Ellen	Forster, Max H.
Cohen, Leonard	Frase, Earline Marie
Cohen, Walter	Freel, Eugene L.
Coleman, James C.	Frick, Frederick Cowing
Comens, Alfred Mart	Fruehling, Wilmut G.
Cook, Ellsworth Barrett	Fuchsman, Seymour Herbert
Cooper, Florence	

Gaeth, John Henry
Gaezer, Frances
Galloway, David William Jr.
Gatling, Frank P.
Gaudet, Frederick J.
Gerlach, Marjorie Elizabeth
Gerstein, Samuel
Giard, Beatrice Lambrecht
Gillenson, Gertrude
Glosser, Harry J.
Godcharles, Charles Augustus
Goffard, Sidney James
Goldin, Frank Samuel
Gorbutt, Dorothy Gale
Gordon, Myron H.
Gorrie, Eda C.
Gothberg, Laura Carolyn
Granneberg, Ralph T.
Grant, Marion Elder
Graves, Winifred Sibley
Grennell, Robert Lovell
Grimsley, Glen
Grzeda, Stanley Cyril
Gwinn, Gordon T.
Hackett, Clarence Gordon
Hackney, Kenneth Urban
Hagenah, Theda
Hake, Dorothy Terry
Hall, Norman Brierley, Jr.
Hamilton, Forrest Sidney
Hammond, Kenneth Robert
Hand, Mary Ella
Handorf, William George
Haner, Charles Frederick
Hanson, Gordon Carl
Haralson, John Vernon
Harris, Robert Dalton
Hartley, Ruth Edith
Harton, John James
Harvey, Dorothy Mayo
Hastings, J. Thomas
Havighurst, Robert James
Hary, Edward Northup
Hayes, Keith James
Hays, Leora Berta
Hayward, John Charles
Healy, Collins
Heine, Ralph W.
Helring, Gill Bernard Paul
Hemphill, John K.
Herring, Martha Westrope
Herrman, May
Heyns, Roger William
Hoffmann, Eva G.
Hogan, Ralph M.
Holsopple, Ila Gay
Howell, Mary Virginia
Hunter, Grace Osborne
Hydle, Lars Larson
Hyman, Harry David
Ingle, John Preston
Ivy, Margaret Louise
Jacobson, Eugene Henry
Jarvik, Murray Elias
Jenks, Lucille
Jewson, Vance Woodbridge
Johnson, Claranne V.
Johnson, Louise Snyder
Jones, John Hall
Justman, Joseph
Kaplan, Vivienne H.
Karlin, Lawrence
Karp, William
Kasman, Saul
Katz, Ernest
Kaufman, Max
Kavkewitz, Henry
Keet, Charles Douglas
Kell, Bill Leroy
Kelly, Walter L.
Kennedy, Thomas Michael
Kepner, Charles William
Kew, John Kendall
Kilstein, Vera
Kleiser, John Raymond
Kline, Milton
Kline, Nathan S.
Knight, Norton B.
Koltun, Sarah Frieda
Kott, Maurice G.
Krueger, Lawrence Frederick
Kruse, Hilding Gustave
Kutner, Bernard
LaGrone, Truda Gough
LaMalfa, Joachim J.
Landisberg, Selma Irma
Landreth, Catherine
Lapidus, George
Latimer, Joseph Marion
Lawson, Joe L., Jr.
Leach, Walter William
Lee, Dorothy Barbara
Leech, James Harvey
LeHew, Helen W.
Leino, Walter B.
Levine, Edna Simon
Lewin, Gertrud Weiss
Lewis, Grace Antoinette
Lichtenstein, Joseph Melville
Lifton, Walter M.
Lindahl, Lawrence Gaylerd
Little, Sue Warren
Lloyd, Morris Van Voorhees
Longstaff, Jane Isabel
Lord, Edith Elizabeth
Lossing, Herbert Alfred
Lowell, Daniel Joseph
Machover, Karen
MacNaughton, Norman
MacNitt, Reginald DeKoven
Macroe, Viola Lucille
Maddock, Ernest
Malm, Marguerite
Mangus, Arthur Raymond
Manson, Morse Packard
Margolin, Joseph Bernard
Markowitz, Leo
Marlowe, Sylvia Jean
Martin, William Ellsworth
Mase, Darrel Jay
McAndrew, Helton
McCary, James Leslie
McClain, Phyllis Drusilla
McConville, Margaret Joan
McGuire, John Carson
McKeon, George J.
McMillan, M. Irene
McPherson, Joe H.
Medland, Francis Frederic
Mehus, Hilda
Michaeli, Ann Wythe
Michal-Smith, Harold I.
Miles, Virginia O.
Milles, Rebeca
Miller, Ferne H.
Miller, Maurine Rogers
Milne, Bentley B.
Mitchell, Wilfred Manlove
Moglen, Muriel S.
Mold, Howard Peter
Mollenkopf, William George
Monod, Mireille Frangine
Mooney, Thomas H.
Moore, James Henry
Mundy, John Price
Murray, Norman L.
Nagaty, Mohamed Osman
Nash, Wilfrid J.
Nelson, Charles W.
Neu, D. Morgan
Newton, Gerald McCown
Nichols, Keturah Rollinson
Nikel, Frank
Nisenson, Max Marc
Nordberg, Gustav Severin
Nussdorf, Milton Martin
Nygard, Arthur H.
Okanak, Zita Louise
Olch, Doris Rosenberg
Organist, Walter Edward
Orleans, Jacob S.
Palm, Rose
Palmer, Harold Jerome
Palmer, James Oscar
Park, John Crawford
Parker, Milton Marvin
Pastore, Nicholas J.
Payne, Ruth Marvin
Payne, Winfred E.
Pepinsky, Pauline W. Nichols
Perpinan, Jesus E.
Phillips, Barbara Ann
Pinard, William John
Platzer, Karl Henry
Plenk, Agnes Mero
Pollack, Irwin
Polley, Clara Consaul
Pomerantz, Alfred Bruno
Prager, Daniel
Prevost, Gerda
Price, Ralph Gordon
Raben, Margaret Walsor
Radvanyi, Laszlo
Rayhill, Carol Ann
Raymond, William T.
Reed, Max Rodney
Reid, Catherine Frances
Reilly, Jean Waid
Remland, Benjamin S.
Rieman, Glenn Walker
Rimoldi, Horacio J. A.
Ritter, Anne M.
Ritzman, Carl
Rose, Dorian Mabyl
Rosenblith, Judith O. F.
Roswell, Florence G.
Roth, Bernice
Rothenberg, Miriam
Rounds, Ruth Evelyn
Rubin, Harry Koenigsberg
Ruggles, Allen M.
Rupe, Jesse C.
Russell, James Thomas
Sageser, Henry Walton
Samuels, Henry
Sandifer, Sister Mary Ruth
Sangiuliano, Iris Agatha
Sayres, Avivah L.
Schultz, Donald Arthur
Schulze, Frances Elaine
Schuman, Howard Milton
Schussler, Ellen

Schwarz, Donald K.
Schwebel, Milton
Scott, Cecil Winfield
Scott, I. D.
Seaton, John Thomas
Segel, Reuben H.
Semans, Catherine Berg
Shand, John Douglas
Shandler, Philip S.
Shedlin, Arthur Jules
Sheehy, Sister Mary Maurice
Sheerer, Elizabeth Taylor
Sherburne, Barbara Jean
Shimberg, Benjamin
Shoben, Edward Joseph Jr.
Shore, Grace
Shover, Jayne
Shubert, Ira Agnes
Shultz, Meyer
Silverman, Simon S.
Simmel, Marianne Lenore
Simon, Charlotte Tulchin
Singer, Erwin
Smith, John
Snyder, Barbara June
Sones, A. Merlin
Speight, Frederick Elson, Jr.
Spielman, Selma
Stackman, Harvey Albert, Jr.
Staiman, Martin G.
Steele, Mary Ellen
Steer, Mack D.
Stein, Harry L.
Steinberg, Arthur
Stephens, Milo R.
Stern, Phyllis Glaser
Stiles, Frances Smythe
Stokesberry, Betty Jane
Stonesifer, Joseph Novak
Strom, Ralph John
Struthers, Alice Ball
Stryker, Sue B.
Stuart, Herman N.
Tarpley, Vera Louise
Taub, Mildred Sherwood
Taylor, Doris Renton
Taylor, Howard Cromwell
Taylor, Kenneth Edgar
Taylor, Mahlon Vincent Jr.
Tennes, Katherine Hrusovar
Thomas, M. Antonia
Thomas, Rachele Milan
Thomas, Ruth
Thomas, William Frederick
Tirrell, Margaret E.
Tracy, William H.
Treat, Wolcott Coit
Trites, Hinson L.
Trowbridge, Elinore Barrie
Urquhart, Helen Lowe
Van Liere, Donald Wilbur
Vaughn, Franklin C.
Vinson, David B.
Von Mengeringhausen, Louise
Wagenheim, Lillian Engel
Wallace, Ellsworth Edward
Warren, Lorene
Warrick, Melvin James
Wattenberg, William W.
Wechsberg, Florence Orin
Wegner, Norma
Weigandt, Joseph Frederick
Welch, Edward Parl
Wellisz, Helena Anna
Wells, Charles Arthur
Wentworth-Rohr, Ralph J.
Wepman, Joseph M.
Wexler, Murray
Whitehurst, Keturah Elisabeth
Whiteley, Robert Harvey
Whittlesey, Ruth Mary
Wilkinson, William Welsby
Williams, Meyer
Williamson, Marjorie Hucker
Willing, Stanley S.
Wilson, Jean Elizabeth
Winch, Robert Francis
Wingert, Judith Woodruff
Winningham, Jane Louise
Witryol, Sam Louis
Wolf, Theta Holmes
Wolin, Burton R.
Wood, Wendoll Fredrick
Wyland, Sam Ross
Yela-Granizo, Mariano
Yeo, J. Wendell
Young, Francis Allan
Yourman, Jack
Zable, Myra V.
Zeaman, David
Zeigler, Margaret May
Zielonka, William A.
Zinn, Natalie
Zucker, Luise Josephine

7. The Executive Secretary announced that the following 23 persons, elected as Associates at the September, 1946 and March, 1947 meetings, by reason of inaccessibility or for other reasons, did not validate their election:

Elected in September, 1946:

Hugh L. Fowler (Died May 27, 1947)
Fred A. Miller

Elected in March, 1947:

Gordon Lanier Barclay
Ellen Cohen
Charles W. Eriksen
Stanley C. Grzeda
Kenneth U. Hackney
Collins Healy
Joseph M. Latimer
James H. Leech
Mireille F. Monod
Philip S. Shandler
LouiseVon Mengeringhausen
Wendell F. Wood

C. REPORTS OF AMERICAN PSYCHOLOGICAL ASSOCIATION COMMITTEES AND ACTIONS ON COMMITTEE RECOMMENDATIONS

1. The Council voted that the report of the Committee on Committees be accepted and printed in the Proceedings (see page 486).

2. The Council voted that the report of the Finance Committee be accepted and printed in the Proceedings (see page 486).

3. The Council voted that the report of the Convention Program Committee be accepted and printed in the Proceedings together with the suggestion that members wishing to comment on the Committee's procedures write to the Chairman of the Committee; that the subcommittee on the Abstract Rating System be continued; and that attention be given to the desirability of providing slide projection facilities for use in connection with papers (see page 485).

4. The Council voted that the report of the Committee on Scientific and Professional Ethics be accepted and printed in the Proceedings (see page 488).

5. The Council voted that the report of the Election Committee be accepted and printed in the Proceedings (see page 490).

6. The Council voted that the report of the Committee on Student Affiliates be accepted and printed in the Proceedings (see page 491).

7. The Council voted that the report of the Committee on Public Relations be accepted and printed

in the Proceedings and that the report be referred to the Policy and Planning Board for consideration of the important policy questions involved (see page 492).

8. The Council voted that the report of the Committee on Publications be accepted and printed in the Proceedings (see page 495).

9. The Council voted that the *Psychological Monographs* and the *Applied Psychology Monographs* be merged into one journal to be called *Psychological Monographs: General and Applied.*

10. The Council voted to authorize the President and the Executive Secretary of the Association to appoint one or more persons to arrange for the preparation of articles on psychology requested by the *Scientific Monthly.*

11. The Council voted that the report of the Board of Editors be accepted and printed in the Proceedings (see page 495).

12. The Council voted that the report of the Conference of State Psychological Associations be accepted and printed in the Proceedings (see page 496).

13. On the recommendation of the Conference of State Psychological Associations and the Board of Directors, the Council voted that the following changes in the By-Laws be submitted to mail vote at the next regular election: In Article XV, Paragraph 1, the sentence reading: "For the purposes of organization, the District of Columbia, the present territories of Alaska and Hawaii, and the Dominion of Canada are to be regarded as states", shall be changed to read: "For the purposes of organization, the District of Columbia, the present territories of Alaska and Hawaii, and the provinces of Canada are to be regarded as the equivalent of states".

14. The Council voted that the report of the Policy and Planning Board be accepted as printed in the AMERICAN PSYCHOLOGIST, 1947, **2**, 191–198.

The next eight items represent actions on the recommendations of the Policy and Planning Board.

15. The Policy and Planning Board proposed, and the Board of Directors approved the proposal, that it be recommended to the Conference of State Psychological Associations that it draft model legislation setting the requirements for certification at the level of the Ph.D. plus one year of experience and that the Conference recommend to the individual state psychological associations that they attempt to enact such legislation in order to provide uniform standards and to make possible reciprocity among the states. The Council voted that action on this proposal be deferred, that an intensive study of the proposal during the coming year be urged on all members, all divisions and all state societies, and that a survey of the attitudes of the membership be carried out next spring by the Central Office after time for study by the membership.

16. In order to bring the requirements for Fellowship in the American Psychological Association in line with the standards for a diplomate of the American Board of Examiners in Professional Psychology, and in order to equalize the opportunity for Fellowship for persons working in different fields of psychology, the Council voted that the following changes in the By-Laws be submitted to mail vote at the next regular election: Article II, Section 3, Item 3, shall be reworded to read as follows: "and (3) five years of acceptable professional experience subsequent to the granting of the doctoral degree".

17. The Policy and Planning Board proposed that the standards for Associate be raised to the doctoral level, beginning January 1, 1950. The Council voted, on recommendation of the Board of Directors, that action on this proposal be deferred, that an intensive study of the proposal during the coming year be urged upon all members, all divisions, and all state societies, and that a survey of the attitudes of the membership be carried out next spring by the Central Office after time for study by the membership.

18. The Board of Directors announced to the Council that the Executive Secretary will be available to the state societies for consultation, especially on plans for organization and on other problems of the societies.

19. Proposals of the Policy and Planning Board and the Board of Directors were modified by the Council who voted that changes in the By-Laws to provide that representatives of a division shall be elected for staggered terms of three years be submitted to mail vote at the next regular election.

20. Proposals of the Policy and Planning Board and the Board of Directors were amended by the Council, who voted that changes in the By-Laws to provide that representatives from the Conference

of State Psychological Associations shall be elected by preferential mail ballot for staggered terms of three years be submitted to mail vote at the next regular election.

21. The Council voted that the Executive Secretary be instructed to prepare a manual for the use of division officers.

22. The Council voted that $1000 be allotted the Policy and Planning Board to cover the expenses of its annual meeting in 1948 and other expenses incidental to its work.

23. The Council voted that the report of the Committee on Precautions in Animal Experimentation be accepted and printed in the Proceedings (see page 496).

24. The Council voted that the report of the Committee on Audio-Visual Aids be accepted and printed in the Proceedings (see page 497).

25. The Council voted that items 2 and 6 of the report of the Committee on Audio-Visual Aids be approved and that the Executive Secretary be instructed to discuss with the Committee the other items in the report (see page 497).

26. The Council voted that the report of the Committee on Graduate and Professional Training be accepted and printed in the Proceedings and that the Committee be commended for their exceptional accomplishments; that this Committee consider any problems of accreditation that may arise prior to September 1948; and that it continue the other activities described in the report (see page 498).

27. The Council voted that Donald W. MacKinnon be elected as a member of the Committee on Graduate and Professional Training to replace Donald G. Marquis, resigned.

28. The Council voted that the Committee on Graduate and Professional Training be asked to undertake a study of present and future status of the Master's degree in psychological training and of other programs short of and other than the doctorate, and the need for individuals with such training.

29. The Council voted that the report of the Committee on the Utilization of Surplus War Materials be accepted and printed in the Proceedings and that the Committee be discharged with thanks (see page 498).

30. The Council voted that the report of the Committee on Clinical Psychology be accepted and printed in the Proceedings, that the Committee be renamed the Committee on the Relation of Psychology to Psychiatry, and that it be reconstituted with Carlyle F. Jacobsen as Chairman, Laurance Shaffer being relieved as Chairman at his own request, and with Carl R. Rogers as a new member to replace Donald G. Marquis, resigned (see page 499).

31. The Council voted that the report of the Committee on International Planning in Psychology be accepted and printed in the Proceedings, that H. S. Langfeld be appointed as International Correspondent of the American Psychological Association, that he be granted a budget of $600, and that he be instructed to relieve the Executive Secretary as far as possible of foreign correspondence (see page 499).

32. The Council voted that the report of the Committee of University Department Chairmen be accepted and printed in the Proceedings (see page 500).

33. The Council voted that the report of the Committee on Training in Clinical Psychology be be accepted and printed in the AMERICAN PSYCHOLOGIST with such revisions as are made by the Committee and approved by the Board of Directors, and that copies of this report be sent to the Veterans Administration, the United States Public Health Service, departments of psychology offering graduate instruction, and other interested agencies.

34. The Council voted that the report of the Committee on Psychological Service Centers be accepted and printed in the Proceedings, that the Committee be continued with the President empowered to make any changes in its membership during the year which he considers desirable, that the Committee be advised that standards for intern training will be the province of the Committee on Training in Clinical Psychology, and further that the Committee be instructed to make a survey of all psychological service centers and report the findings to the Board in March for discussion of standards to be set for inclusion in the directory (see page 501).

35. The Council voted that the report of the Committee on the American Board of Examiners in Professional Psychology be accepted and printed in the Proceedings and that the Committee be discharged with thanks for its services (see page 502).

36. The Council voted that the United States Public Health Service and Dr. Robert Felix be

for Mental Hygiene that the Association join them in sponsoring a radio program on mental hygiene, and to report findings to the Board of Directors which is granted the power to act on the findings.

2. The Council voted that the American Psychological Association recommend to the United States Civil Service Commission that possession of the Ph.D. degree in psychology be required for employment in the federal civil service for positions as Clinical Psychologist classified at and above the grade of P-4.

3. The Council voted that the request of the Veterans Administration for cooperation in obtaining speakers for their conferences on job placement opportunities and problems of neuropsychiatric veterans be referred to the Division of Clinical and Abnormal Psychology for action.

4. The Council voted that the Executive Secretary advise the American Association for the Advancement of Science that the American Psychological Association prefers December as the time for AAAS meetings.

5. The Council voted that the Executive Secretary be authorized to proceed with the plans for preparation of a booklet on careers in psychology, employing one or more consultants whom he may choose to assist him.

6. The Council voted to approve the request of the Division of Clinical and Abnormal Psychology that the American Psychological Association office undertake the collection of special dues ($3.00 for Fellows, $2.00 for Associates) assessed by the division and that the division be billed for the cost of this service.

7. The Council voted to approve the proposal of the Division of Personality and Social Psychology that the President of the American Psychological Association appoint a continuing Committee on Psychology and World Affairs to report back to the Board of Directors and the American Psychological Association membership on the psychological aspects of the present explosive situation which threatens the unity of mankind and of civilization itself. This Committee would concern itself with (a) possible plans for research on various psychological features of the problem such as social interaction, morale for harmony and attitudes of hostility and mutual confidence, and (b) opportunities for cooperation with like committees from other scientific bodies, both physical and social.

J. BUDGET

1. The Council voted to approve the Budget for 1948 as submitted by the Board of Directors (see page 510).

2. The Council voted that dues of Student Affiliates be increased to $7.50; those of Associates to $12.50; and those of Fellows to $17.50.

3. The Council voted to increase the dues of State and Division Affiliates to $4.00.

4. The Council voted that dues of Foreign Affiliates be established at $4.00 and that the payment of these dues may be waived in cases of severe hardship or currency restriction.

K. ADJOURNMENT

1. The Council voted to approve the following resolution: Be it resolved that the American Psychological Association extend its thanks to Dr. Edward T. Raney and the members of the Committee on Local Arrangements for their efficient handling of arrangements for the fifty-fifth annual meeting of the Association.

2. The meeting of the Council of Representatives adjourned at 12:45 A.M., Thursday, September 11, 1947.

REPORT OF THE RECORDING SECRETARY

To the Council of Representatives of the American Psychological Association:

Members of the Board of Directors held their semi-annual meeting in Ann Arbor, Michigan, March 28, 29, and 30, 1947. All members of the Board were present.

REPORTS OF OFFICERS

1. The President, Carl R. Rogers, presented his report covering interim appointments.

The Recording Secretary read a report covering the results of mail ballots sent out since September. On these ballots:

a. It was voted to allot $200 to the Committee on Graduate and Professional Training in Psychology for the continuation of the Boring and Bryan Study of Careers of Women in Psychology.

b. It was voted to allot $100 to Gilbert Rich for the Conference of State Psychological Associations.

c. It was voted to mail questionnaires to all members of the APA in order to obtain detailed information on present position, training, and previous experience.

d. It was voted to approve a ballot for nominations to the American Board of Examiners in Professional Psychology. It was agreed that the ballot would include nominations made by the Divisions of Clinical and Abnormal Psychology, Consulting Psychology, and School Psychologists in Group 1, nominations made by the Divisions of Industrial and Business Psychology and Counseling and Guidance Psychologists in Group 2, and nominations by the Board of Directors for Group 3 representing psychology at large.

e. The ballot as approved was sent to the Council of Representatives and the following persons were elected:

Group 1—George A. Kelly
David Shakow
David Wechsler
F. L. Wells

Group 2—Marion A. Bills
John G. Jenkins
John G. Darley
Carroll L. Shartle

Group 3—Carlyle Jacobsen

f. The Board was asked to choose between two alternative methods of distributing funds to the various divisions of APA:

(1) Allocation of funds to a division in proportion to the number of its representatives in the Council of Representatives;

(2) The appointment of a Committee to estimate the probable size of the membership of each division and the allotment of money in proportion to the estimated size.

Alternative "1" was passed.

g. It was voted that this allotment of money be made with the understanding that it was tentative and that additional money would be appropriated to a division in case of need.

h. It was voted to authorize Willard Valentine and Dael Wolfle to rent and use a safety deposit box at the American Security and Trust Company, Washington, D. C.

The Executive Secretary presented his report and the agenda for the meeting. These items are covered in the following report.

MEMBERSHIP AND CERTIFICATION

1. The Board spent one afternoon reviewing the applications of candidates for Associateship in the Association and voted the election as Associate members of the persons found acceptable.

2. It was voted that Student Affiliates be admitted any time during the year and that the Executive Secretary be given discretion in determining the date on which journal subscriptions should begin.

3. The Board discussed at length the present requirements for Fellowship in the APA, particularly the alternative, "either acceptable published research beyond the doctoral degree or four years of acceptable professional experience subsequent to the granting of the degree." There were questions about the ambiguities of interpreting these standards and about the fairness of the requirements. It was finally agreed that the subject required careful study and that any solution should be integrated with the consideration of other problems of criteria for membership and certification. It was voted that the problem of membership in general and of certification be referred to the Policy and Planning Board for consideration and report back to the Council by September.

4. The Executive Secretary outlined the request of the U. S. Public Health Service that the APA prepare a statement of requirements for a graduate training program in clinical psychology. It was pointed out that other related problems such as accrediting schools for such training had already been raised by the Veterans Administration and the Public Health Service, and that these agencies would be able to give financial support to such studies. After an extended discussion of the problems involved, the following motion was made and passed.

In view of the urgency of requests from the USPHS and VA for the definition of training programs, training standards and the evaluation of present facilities for training in clinical psychology, it is moved that:

a. The Board of Directors authorize the President of the APA to appoint a special Committee on Training in Clinical Psychology, to perform the following tasks:

(1) To formulate a recommended program for training in clinical psychology.

(2) To formulate standards for institutions giving training in clinical psychology, including both universities and internships and other practicum facilities.

(3) To study and visit institutions giving instruc-

tion in clinical psychology, and make a detailed report on each institution.

(4) To maintain liaison with other bodies concerned with these problems, including the Committees of the American Orthopsychiatric Association, the National Committee for Mental Hygiene, and others.

b. The appointment of the Committee should recognize, (1) the special interest of the Division of Clinical and Abnormal Psychology, and (2) the overlap of functions of this Committee with several existing committees. The appointments will therefore be made as follows:

(1) The Chairman will be appointed by the Board of Directors, on recommendation of the President of the APA.

(2) The divisional president of the Division of Clinical and Abnormal Psychology will obtain recommendations from the Executive Committee of that division as follows:

(a) He will submit to the Executive Committee the names of all members of the APA Committees on Graduate and Professional Training, on Clinical Psychology, on Standards for Psychological Service Centers, and of University Department Chairmen, and request that each person be rated as acceptable or unacceptable.

(b) He will request the Executive Committee to propose other members to represent the field of clinical psychology.

(c) He will submit the recommendations of the Division of Clinical and Abnormal Psychology to the President of the APA who will appoint the committee from among those recommended.

(3) In making the appointments, the President of the APA should include a representative of general psychology, a department head, and a university administrator, insofar as possible.

(4) In performing its functions, the Committee may utilize the services of such consultants as it deems necessary.

c. The Committee should prepare a preliminary report for presentation to the Council of Representatives in September, 1947, including recommendations for a training program. It should be an objective of the Committee to complete a first evaluation of training institutions by February, 1948. Such a report, made between annual meetings, will be submitted by mail through the Executive Secretary to the Board of Directors.

5. It was voted that the Executive Secretary and the Chairman of the Committee on Training in Clinical Psychology be authorized to draw up and submit to the U. S. Public Health Service a project covering the activities of the Committee on Training in Clinical Psychology and that the Executive Secretary be authorized to make expenditures necessary for the work of the Committee.

6. After hearing the report of Carlyle Jacobsen, President pro tem of the American Board of Examiners in Professional Psychology, the Board voted that the American Board of Examiners be granted a loan of $2000 from the APA without interest and without termination date.

7. The Board discussed a letter from William Clark Trow recommending that the APA take a stand on requirements for the state certification of psychologists. It was voted that Dr. Trow's letter be referred to the Policy and Planning Board for consideration and report to the Council in September.

8. It was voted to endorse the request of James G. Miller and others that Congress be asked for authority to remove clinical psychologists from civil service requirements and procedures and that the Executive Secretary be authorized to draw up a statement to this effect to be sent to the appropriate people.

9. The Board discussed an inquiry received from the Adjutant General's Office regarding the character of positions filled by persons designated as clinical psychologists. It was voted that the inquiry be referred to the Policy and Planning Board for discussion in connection with the general consideration of certification problems.

10. It was voted to defer approval of the listing of the names of APA members as "member of the American Psychological Association" in classified telephone directories.

CENTRAL OFFICE OF APA

1. The Executive Secretary sketched the great increase in work of the Central Office incident to the increase in membership, in publications, and in other responsibilities. It was moved that the Executive Secretary be empowered to increase the personnel, equipment, and printing budget to meet the current needs of the Central Office.

2. It was voted to approve the Central Office

lease with the American Association for the Advancement of Science.

3. On the suggestion of the Treasurer, it was voted that the Executive Secretary be empowered to sign checks for operating expenses of the Association and that the Treasurer continue the responsibility of signing checks covering capital investments.

PUBLICATIONS

1. It was voted to approve selling the *Psychological Bulletin* to Student Affiliates at the special rate granted to members.

2. The Executive Secretary raised the question of establishing criteria for Foreign Affiliates wishing to receive APA journals at special rates when these persons reside in countries where there are no psychological associations. It was voted that the problem of classification of Foreign Affiliates be referred to the Committee on International Planning in Psychology and that recommendations be made to the Council in time for action at the September meeting.

NOMINATIONS

1. The Board discussed the need for a code of ethical standards for psychologists and voted that the President be authorized to appoint a Committee on Ethical Standards for Psychology.

2. After consideration of the problem of liaison with the National Conference on Social Work it was voted that the Recording Secretary should solicit from interested divisions, nominations for a committee to continue relations with the National Conference on Social Work.

The report of the Committee on Committees was read.

3. It was voted to authorize their request to hold a meeting in September at Detroit to be attended by the Standing Committee Chairmen for a discussion of the scope and work of the various committees.

4. The request that certain Special Committees be made into Standing Committees was discussed. It was moved that the Executive Secretary write the Committee on Committees explaining that the By-Laws provide for specific Standing Committees and that anyone is at liberty to initiate the change in the By-Laws which is necessary in order to convert Special Committees into Standing Committees.

5. The following persons were nominated for the committees of the Association. These will be voted on by the Council of Representatives in September.

Committee on Committees (1 to be elected): C. N. Cofer, E. Heidbreder, J. Volkmann.

Finance Committee (4 to be elected): P. Achilles, M. A. Bills, S. H. Britt, L. Carmichael, S. W. Fernberger, H. E. Jones, C. M. Louttit, A. W. Melton, T. G. Thurstone.

Program Committee (1 to be elected): T. G. Andrews, D. B. Lindsley, F. McKinney.

Committee on Ethics (1 to be elected): D. K. Adams, J. C. Flanagan, M. Metfessel, G. Rich.

Committee on Student Affiliates (1 to be elected): F. W. Finger, D. A. Grant, L. G. Humphreys, D. B. Stuit, R. L. Thorndike.

Committee on Public Relations (1 to be elected): A. A. Campbell, G. H. Gallup, C. S. Hall, J. G. Jenkins.

Committee on Publications, from the Council (1 to be elected): W. Dennis, C. L. Shartle, B. F. Skinner.

Committee on Publications, from Board of Editors (1 to be elected): H. S. Conrad, L. H. Lanier, C. M. Louttit, C. P. Stone.

Policy and Planning Board (3 to be elected): A. I. Bryan, S. W. Cook, F. A. Geldard, E. R. Guthrie, M. E. Hall, R. Likert, H. Peak, K. W. Spence, S. S. Stevens, R. M. Yerkes.

Representatives to NRC (3 to be elected): W. J. Brogden, E. A. Doll, H. F. Harlow, S. R. Hathaway, W. E. Kappauf, C. Landis, D. B. Lindsley, R. N. Sanford, R. P. Youtz.

Committee on Precautions in Animal Experimentation (1 to be elected): R. M. Gagne, W. D. Neff T. C. Ruch.

Committee on Audio-Visual Aids: No change.

Committee on Graduate and Professional Training: No change.

Committee on Standards for Psychological Service Centers: No change.

Committee on Utilization of Surplus War Materials: No change.

Committee on Clinical Psychology: No change.

Committee on International Planning in Psychology: Add Jerome S. Bruner to the present committee.

Committee on University Department Chairmen: No change.

6. The question was raised whether it would be desirable to elect members of the Board of Directors

by mail or by vote at the September meeting. It was voted that the Recording Secretary send a nominating ballot to Council Members listing the names of persons eligible for nomination to the Board of Directors; that the Council be asked to choose six of these names in preferential order; and that the question be asked whether final election should be conducted by mail ballot or during the meeting of the Council in September.

REQUESTS FOR AFFILIATION

1. The Board voted to approve the affiliation of the District of Columbia Psychological Association with the APA, to take effect immediately.

2. It was voted to recommend that the Illinois Association of Applied Psychology be admitted as an affiliate of the APA at the September meeting of the Council of Representatives.

3. The question was raised of whether the APA should be affiliated with the National Conference on Social Work and it was voted that this problem be referred to the Committee on Liaison with the National Conference on Social Work.

MISCELLANEOUS

1. The Treasurer reported that the APA now holds $3500 remaining from the sale by the Psychological Review Company of the proceedings of the International Congress of Psychology held in New Haven in 1929. It was voted that this money be appropriated for the next International Congress of Psychology as a gesture toward postwar reconstruction of psychology.

2. It was voted to authorize the payment of expenses incurred by the Directors in attendance at the midyear meeting of the Board.

3. Dael Wolfle and Lowell Kelly, APA Representatives to the Intersociety Committee for a National Science Foundation reported their work to the Directors and outlined the problems before the Committee. It was voted that $300 be appropriated by the APA for the use of the Intersociety Committee. It was also voted to ratify the President's appointment of Dael Wolfle and Lowell Kelly as APA Representatives to the Intersociety Committee.

4. After discussion of the invitations received from Denver and San Francisco by the Association for a 1949 meeting, it was voted that the Executive Secretary be instructed to find out whether the San Francisco option would be held open until the Council meeting in September and that he inform the Council of his findings and ask them to consider the Denver and San Francisco invitations at the September meeting.

5. The Board voted to extend its thanks to Dr. Marquis and the University of Michigan for the hospitality extended to the Board of Directors.

Respectfully submitted,
Helen Peak, *Recording Secretary*

REPORT OF THE TREASURER FOR THE YEAR 1946

To the Board of Directors and the Council of Representatives of the American Psychological Association:

The first year of operation of the reorganized APA and the first year with the APA business management centralized in the Washington office ended with a surplus of income over expenses of $1,910.66.

The accounts of the Association have been audited by Ernst and Ernst, Accountants. Their report is a detailed one. It has been examined by the Board of Directors. Appended to this report is a summary statement of the income and expenses grouped according to major subdivisions.

The assets of the Association at the end of 1946 exceeded its liabilities at that time by $84,422.78. This is an increase of $3,359.21 in the net worth of the Association. A total of $74,920.00 was held in the form of marketable securities, the remainder was in bank deposits. In addition to the net worth figure given above, the Association held in two special accounts the sum of $10,024.07. Of this amount $6,696.24 was held for the *Journal of Abnormal and Social Psychology*. The terms of the gift of that journal to the Association require that any excess of income over expenditures in connection with it be used solely for the purposes of that journal. The amount stated represents the surplus in that fund as of December 31, 1946. The amount of $3,327.83 was held in a special fund to be used for postwar reconstruction of psychology.

During the year the Association made a gift of $5,000 to the building fund of the American Asso-

ciation for the Advancement of Science. Arrangements were also made for the Association to lease office space in the building owned by the American Association for the Advancement of Science. In consideration of that gift, the annual rent paid by the Association was reduced $200.00, which represents an annual return of 4% on the gift made to AAAS.

Throughout the year 1946 the financial affairs of the Association were under the direction of the Treasurer, Willard L. Valentine. The accounts were audited subsequent to his death. In view of the fact that the Association for the time being has no Treasurer, this report was prepared by the Executive Secretary.

Respectfully submitted,
Dael Wolfle, *Executive Secretary*

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

STATEMENT OF INCOME AND EXPENSE

1946

Income

Dues		$24,862.03
Fellows	$10,218.74	
Associates	14,590.29	
Student Affiliates	53.00	
Subscriptions from Members		34,745.75
Abstracts	13,148.50	
Bulletin	4,258.50	
American Psychologist	6,307.50	
Clubs	11,031.25	
Supplementary Subscriptions		26,687.23
Abnormal	3,804.90	
Abstracts	5,700.58	
Review	3,584.03	
Bulletin	3,618.58	
Experimental	2,944.49	
Monographs	1,214.47	
Applied	5,079.69	
Consulting	433.03	
American Psychologist	307.46	
		5,430.67
Sale of Back Numbers		1,971.89
Advertising		2,354.68
Income from Investments		5,747.37
American Association of Applied Psychologists		2,315.07
Miscellaneous		
TOTAL INCOME		$104,114.69

Expense

Printing Costs		$43,896.21
Abnormal	$4,569.88	
Abstracts	9,071.06	
Review	3,519.27	
Bulletin	5,212.29	
Experimental	3,997.65	
Monographs	421.16*	
Applied	4,924.61	
American Psychologist	10,416.20	
Consulting	2,606.41	
Editorial Stipends		4,287.50
Abnormal	400.00	
Review	400.00	
Bulletin	400.00	
Experimental	400.00	
Monographs	200.00	
Applied	400.00	
American Psychologist	1,437.50	
Consulting	400.00	
Applied Monographs	250.00	
Officers' Stipends		800.00
Secretary	400.00	
Treasurer	400.00	
Abstracts Editorial Office Expense		6,286.92
Assistant Editor	3,380.91	
Editorial Clerk	2,334.42	
Abstractors & Translators	571.59	
Abstracts Editorial Office Expense		592.36
Business Office Salaries		21,564.51
Business Office Expense		11,898.62
Travel—Executive Secretary		568.19
Annual Audit		315.99
Annual Meeting Expense		182.71
Committee Expense		2,422.43
Program	88.87	
Board of Editors	339.94	
Election	805.00	
Publications	90.75	
Grad. & Prof. Training	166.40	
Clinical	20.35	
Scientif. & Prof. Ethics	218.19	
Policy and Planning Board	692.93	
Payments to Divisions		589.77
Memberships		1,335.00
Office of Scientific Personnel	1,250.00	
Intersociety Color Council	25.00	
American Council on Education	10.00	
National Council on Rehabilitation	50.00	
To the American Association for the Advancement of Science		5,000.00
Reprint Costs		2,096.92
Miscellaneous		366.90
TOTAL EXPENSE		$102,204.03
NET INCOME		$1,910.66

* Credit figure.

REPORTS OF STANDING COMMITTEES

REPORT OF THE COMMITTEE ON COMMITTEES

To the Council of Representatives of the American Psychological Association:

In accordance with its 1946 report, the Committee on Committees has developed a procedure for nominating candidates for APA committee appointments to the Board of Directors. On 19 March 1947, your Committee forwarded to the Board of Directors panels of nominees for APA committee vacancies occurring up to September 1947. These nominations were reviewed and considered by the Board of Directors at its meeting in March 1947.

Your Committee also recommended to the Board of Directors that at least the following special committees of the APA be made into standing committees, in order to provide some rotation of committee services: Committees on: Audio-Visual Aids; Animal Precautions; Graduate and Professional Training; and Standards for Psychological Service Centers.

Your Committee has requested authorization to meet with APA standing committee chairmen at appropriate times and places for a discussion of the scope and work of the several APA committees. Authorization for similar study of the Divisional committee structure was also requested.

The Board of Directors has asked the Committee on Committees to consider methods for the establishment of a roster of eligible and promising committee members, to aid the Board in its task of recommending committee appointments to the Council of Representatives.

Respectfully submitted,
Alice I. Bryan
Claude Buxton
J. P. Guilford
R. E. Seashore
J. G. Darley, *Chairman*

REPORT OF FINANCE COMMITTEE

To the Council of Representatives of the American Psychological Association:

The invested funds of the Association totalling $109,611.36 ($31,482.61 distributed in nine savings accounts and $78,128.75 in bonds) earned $2354.68 in interest in 1946.

Employment of the firm of Ernst & Ernst to audit the Association's financial records for the year 1947 is recommended.

Respectfully submitted,
Marion A. Bills
Leonard Carmichael
Samuel W. Fernberger
C. M. Louttit

REPORT OF THE CONVENTION PROGRAM COMMITTEE

To the Council of Representatives of the American Psychological Association:

A report of the plans for the 55th Annual Meeting was made by the Convention Program Committee in the April issue of the AMERICAN PSYCHOLOGIST (1947, **2,** 120–126). These plans were formulated after an informal survey by the committee of membership opinion upon the Convention Program and may be considered as part of this report.

SPECIFIC PROCEDURES

The "Plans" included the following arrangements for the convention program of the 55th Annual Meeting upon which the members may wish to express their opinion.

1. A regular form outlined according to necessary inclusions, for use by all members in submitting abstracts for papers.
2. An abstract-rating system, arranged for multiple anonymous judgment.
3. Separate division and Convention Committee "Call for Papers" (where desired by division), with Convention Program Committee as coordinator.
4. Technical Problem Symposia a division responsibility, with the Convention Program Committee as coordinator.
5. Specified organization for Technical Problem symposia (Cf. AMER. PSYCHOLOGIST, 1947, **2,** P. 120), with problem defined, discussion limited to specialists, and chairman directing discussion and summarizing in plan of action.
6. Papers grouped according to similarity of content, with four for each paper-reading section.
7. Paper-reading sections scheduled for one hour, with parallel sessions at the same hours, regular intervals between sessions, and the same schedule daily throughout the convention.
8. Symposia scheduled for two hours, with paral-

lel sessions at the same hours and the same daily schedule throughout the convention.

9. Division presidential addresses and business meetings scheduled on one (and an early) evening of the convention, and staggered to avoid conflicts of interests.

10. Distribution of division programs (paper-reading sections and symposia) in blocks with least conflict of interests throughout the convention program.

11. Presentations requiring apparatus, such as projectors and lanterns, scheduled in special sessions under supervision of Committee on Audio-Visual Aids.

12. Public addresses increased from one to two parallel sessions on same evening.

13. Evening program of theoretical addresses with two parallel sessions on same evening added to convention program.

14. Chairmen of sections instructed to integrate for discussion, where possible, the four papers of a paper-reading section, and to hold rigidly to schedule.

SUGGESTIONS FOR DIVISIONS

The Convention Program Committee has delegated responsibility for the development of the convention program as far as possible this year to the divisions, and has considered its function one of coordination. It believes that this policy is sound from the point of view of strengthening division organization. It has the following specific suggestions:

1. Divisions study their specific interests in the Convention Program and present them to the Convention Program Committee for coordination.

2. Divisions use the abstract-rating system in evaluation of abstracts submitted to them in response to Division "Call for Papers".

SUBCOMMITTEE ON THE ABSTRACT-RATING SYSTEM

The following subcommittee has been appointed by the Convention Program Committee to develop a merit rating system for the judgment of abstracts of papers: Robert J. Wherry, Chairman, Hubert Brogden, Edward E. Cureton, Edwin R. Henry, Erwin K. Taylor.

Suggestions were made by the Convention Program Committee as to the factors on which abstracts might be rated for their selection and the subcommittee on the abstract-rating system was asked to prepare a system with such preliminary validation as possible for use this year by the Convention Program Committee and to validate the system upon the Convention Program at Detroit, reporting to the Convention Program Committee of 1948.

The subcommittee on the Abstract-Rating System presents the following preliminary report:

"The Subcommittee collected many suggestions as to items to be rated. Consideration of the possibility of objectively rating each item from an abstract resulted in the selection of the four following rating areas:

1. Adequacy of basic data
2. Adequacy of analysis
3. Originality and worthwhileness of the study
4. Interest to APA membership

In each area several items to be looked for and considered were to be checked, after which an area rating was assigned on a 9-point adjective scale. Finally, the rater was to give an over-all evaluation, again on a nine-point system. Weights of 1 were assigned to scales (3) and (4), of 2 to scales (1) and (2), and a weight of 4 was given to the over-all scale. Each abstract was to be rated by three judges, and a combined point score assigned to the abstract. The rating scale has been applied in this manner to all abstracts submitted to the Convention Program Committee and to all Abstracts selected by divisions. A validation procedure will be applied to the convention program at Detroit and a report of results rendered at a later date." (Signed) Robert J. Wherry, Chairman, Subcommittee on the Abstract-Rating System.

SELECTION OF ABSTRACTS

One hundred and eight abstracts were submitted to the Convention Program Committee. The divisions selected 92 abstracts, grouped into paper-reading sections. The Psychometric Society included a program of 5 papers. In addition, the divisions included 24 Technical Problem Symposia in the Convention Program.

Under the direction of the subcommittee on the Abstract-Rating System, all abstracts were rated by teams of three raters, working in the special fields of psychology to provide three ratings for each

abstract. The division-selected abstracts were rated to give comparable data for validation purposes with abstracts selected by the Convention Program Committee to be presented at the annual meeting. Twenty-two psychologists served the Convention Program Committee anonymously as a Board of Raters to perform this task.

Distribution data for total scores of the three ratings of abstracts were as follows:

	Md.	*O.*	*Range*
108 abstracts submitted to Convention Program Committee..	122	27	24–211
92 abstracts selected by Divisions.....	119	25	19–202

The facilities for the Detroit meeting placed a limitation upon the number of paper-reading sections that could be included in the Convention Program. Therefore, the number of papers in addition to those selected by the divisions was determined administratively, and a cut-off point set in the distribution of the 108 abstracts submitted to the Convention Program Committee at a score of 96. This caused a rejection of 23 papers ranging in scores from 24 to 93.

The procedure of rating and selection was done anonymously, the abstracts having been separated from the contributor's personal statement and numbered prior to the rating and selection procedure. No member of the Convention Program Committee or Board of Raters, was, or is now, informed of the names of the contributors of the rejected abstracts. Notification of acceptance or rejection of abstracts was handled as an administrative function of the Office of the Executive Secretary. If, in the rating procedure, a rater recognized the probable contributor from the content of an abstract, he did not rate the abstract, but a rating was made by a special team for this purpose.

RECOMMENDED

1. That the members be given an opportunity to express opinions upon the specific procedures indicated in this report, as incorporated in the Convention Program at the Detroit annual meeting.

2. That the suggestions for divisions indicated in this report be transmitted to the secretary of each division.

3. That the subcommittee on the Abstract Rating System be continued until it completes its assignment of the development of a valid procedure for rating abstracts.

Respectfully submitted,

Irvin L. Childs
George A. Kelly
Donald G. Marquis, President-Elect
Willard C. Olson, Local Representative
Edward T. Raney, Chairman, Local Committee
Douglas H. Fryer, *Chairman*

REPORT OF THE COMMITTEE ON SCIENTIFIC AND PROFESSIONAL ETHICS

To the Council of Representatives of the American Psychological Association:

BRIEF HISTORY OF THIS COMMITTEE

In 1938 the Association formed this Committee "to consider the advisability of drafting an ethical code, the purpose of which would be to serve as a guide to Members and Associates." The Committee was continued at the Annual Meeting in 1939. In 1940 its report was submitted, signed by R. S. Woodworth (Chairman), W. V. Bingham, E. A. Bott, H. A. Carr, Franklin Fearing, H. M. Johnson, T. R. Kelley, D. G. Marquis.

This 1940 report stated: (1) That in the Committee's opinion "to legislate a complete and rigid code would be premature at the present time;" (2) That although not empowered to investigate and act on complaints of unethical conduct, several such complaints had been referred to the committee which took the liberty of acting on an informal basis; (3) That a standing committee of the APA should be created to handle cases and report instances recommended for disciplinary action to the Association, and "to formulate from time to time rules or principles of ethics for adoption by the Association." This recommendation was adopted, the standing Committee created, and incorporated into the By-Laws of the reorganized APA.

Each year since 1940 there have been cases of questionable scientific and ethical practices involving members of the APA which have been handled, for the most part informally, by the Committee.

There have also accumulated in the Committee's files certain suggestions relating to the preparation of a scientific and professional code of ethics for psychologists. (The 1940 Report contains such material; likewise the concluding pages of a special report on the Klein Institute prepared in December 1945 by E. E. Cureton, Alice I. Bryan, J. G. Peatman).

There follows a partial bibliography of recently published discussions of the problem of ethical and professional standards.

Bixler, R. and Seeman, J. "Suggestions for a code of ethics for consulting psychologists." *J. abnorm. soc. Psychol*, 1946, **41**, 486–490.

Cutts, N. E. "Development of a certification procedure for school psychologists." *J. consult. Psychol.*, 1943, **7**, 45–49.

Cornell, E. R. "Certification of specialized groups of psychologists." *J. consult. Psychol.*, 1941, **5**, 62–65.

English, H. B. "Fundamentals and fundamentalism in training applied psychologists." *J. consult. Psychol.*, 1941, **5**, 1–13.

Kirkpatrick, F. H. "Psychological racketeers." *Person. J.*, 1942, **20**, 283–286.

Kuhlmann, F. "Classification and licensing of psychologists." *Amer. J. Psychol.*, 1943, **56**, 120–129.

Landis, C. "Certification by the state as contrasted to certification by psychological organization." *J. consult. Psychol.*, 1941, **5**, 56–58.

Luckey, B. M. "Résumé of Pennsylvania Round Table on licensing psychologists." *J. consult. Psychol.*, 1941, **5**, 78–79.

"Principles of medical ethics" (American Medical Association). *J. clin. Psychol.*, 1945, **1**, 336–342.

Sargent, H. "Professional ethics and problems of therapy." *J. abnorm. soc. Psychol.*, 1945, **40**, 47–60.

Sutich, A. "Toward a professional code for psychological consultants." *J. abnorm. soc. Psychol.*, 1944, **39**, 329–350.

NEED FOR A CODE OF SCIENTIFIC AND PROFESSIONAL ETHICS

Although in 1940 it seemed "premature" to establish a "complete and rigid code" it definitely does not, in 1947, seem premature to work rapidly toward a formal set of standards to guide psychologists, especially those who are active in consulting and clinical practice. It will never be practicable or desirable to devise a "complete" or a "rigid" code. Yet in view of the rapid growth of professional psychology, the time is clearly ripe to formulate certain guiding principles.

The experience of this Committee during 1946–47 has shown the urgent need for early progress in this direction. For example, several members of the Association have written to the Committee asking what APA standards exist regarding the advertising of professional services. Since no formal definition of acceptable practice in this regard has been stated, the Committee found itself forced to advise somewhat arbitrarily. At least one instance of offensive advertising was brought to the Committee's attention, but in dealing with the offender, the Chairman had no authoritative statement to support him. The present unwritten code is tenuous, elusive, and unsatisfactory.

Confronted with evidence of the growing need for an explicit statement of standards, the Committee considered with the Executive Secretary the best mode of procedure. It was felt that the five members of the Committee themselves provided too narrow a group to undertake the formulation. Several divisions of the APA are deeply concerned with problems involved in designing an acceptable code. Several Committees of the APA are already at work on related issues. Regional and other affiliated societies are concerned with identical problems, and in some cases have committees of their own to draft sets of standards. *The universality and timeliness of interest therefore indicate that a representative body of psychologists, selected from nominations submitted by interested divisions and other bodies, should be formed to study the matter thoroughly and to devise rules of ethical practice that may in due time be adopted formally by the Association for the guidance of all its members.*

At the suggestion of the Committee, in the spring of 1947, the Executive and Recording Secretaries solicited nominations from interested divisions, in order that the formation of a Committee on Ethical Standards should not be delayed.

COMPLAINTS HANDLED

The Committee has no disciplinary action to recommend at this time. Since its current cases have been dealt with in an informal manner, it seems best not to identify the individuals concerned. Full data on the cases are, of course, available in the event that they are needed for future action.

1. A newly elected Associate was found to be making extravagant claims in his advertising which in addition announced his membership in the APA in a manner that implied the Association's endorse-

ment of his work. The Chairman cautioned the new member that unless the offending portions of his advertising were eliminated it would be necessary to make a Committee issue of the matter. The member replied that he had ceased all advertising, and would wait for guidance from the prospective professional code.

2. Three instances of what appeared to be "mail order guidance" were investigated, but in none of these instances was there ground for the complaint. Up to now there is no official APA disapproval of this practice—another instance where the lack of a formal code is felt.

3. Complaints regarding charlatan practices in a given region, made by APA members but not involving an APA member, obviously cannot be handled by this Committee. In such instances the complainants have been urged to deal with local Better Business Bureaus or with legal authorities. This type of complaint shows again the need for a code of acceptable practices that may be used to guide the policies of local psychological organizations and Better Business Bureaus, and ultimately perhaps law-making bodies.

4. Two former cases in the files of the Committee have been opened by recent complaints. Both represent instances where informal agreements with the Committee have apparently been violated. At the present time both cases are being investigated.

RECOMMENDATIONS

1. That the Directors and Council see that a properly constituted, representative, special committee is appointed to work on a Code Governing the Professional Practice of Psychology.

2. That the membership of the present Standing Committee be provided for as prescribed by the By-Laws, including the rotation of chairmanship.

Respectfully submitted,

E. A. Doll
H. B. English
Edwin Ghiselli
E. R. Guthrie
G. W. Allport, *Chairman*

REPORT OF THE ELECTION COMMITTEE

To the Council of Representatives of the American Psychological Association:

The Election Committee reports the election of Ernest R. Hilgard as President-elect for the year 1947–48 and of the three following Regional Representatives to the Council of Representatives for the period 1947–50:

Region II, Gardner Murphy
Region V, Donald K. Adams
Region VIII, Jean Walker Macfarlane

Final elections were conducted for a number of the APA divisions. The results of these elections have been transmitted to the secretaries of the appropriate divisions.

Three amendments to the By-Laws, approved by the Council of Representatives at the 1946 annual meeting, were submitted to the entire membership by mail ballot. All three amendments passed. The amendments and the vote on each were as follows:

a. Change Sections 2 and 3 of Article VII to read as follows:

"2. Any member of the Association may apply for membership in one or more divisions under the rules of eligibility and election established by the divisions.

"3. Associates not expressing a preference for a special division may be Associates without division affiliation."

Vote: Yes, 1621; No, 96, not voting, 2.

b. Article II, Section 7 to be revised as follows:

"In addition to the regular membership classes there shall be four classes of affiliates . . . These four classes shall be first, Student Affiliates, second, Division Affiliates, third, State Affiliates, and fourth, Foreign Affiliates."

A new Section of Article II to follow that on State Affiliates:

"Foreign Affiliates shall be psychologists who reside in countries other than the United States or the Dominion of Canada, who are not members of the American Psychological Association, but who desire affiliation. A Foreign Affiliate shall be a member of the psychological association of the country in which he resides, or, if no such association exists, shall present evidence of appropriate qualifications. Foreign Affiliates shall have such rights and privileges as may be granted by the Council of Representatives, including special rates for journal subscriptions."

Article XXI, Section 1 to be revised as follows:

"... Division Affiliates, State Affiliates, and Foreign Affiliates shall be ..."

Article XXI, Section 3 to be revised as follows:

"3. The annual subscription of Division Affiliates, State Affiliates, and Foreign Affiliates (non-members of the Association) shall be ..."

Vote: Yes, 1633; No, 72; not voting, 14.

c. Article XIX of the By-Laws of the Association be repealed, and Articles XX to XXII be renumbered XIX to XXI.

Vote: Yes, 1663; No, 30; not voting, 26.

Respectfully submitted,
Edwin R. Guthrie
Gardner Murphy
Carl R. Rogers
Henry E. Garrett, *Chairman*

REPORT OF THE COMMITTEE ON STUDENT AFFILIATES

To the Council of Representatives of the American Psychological Association:

During the past year, the Committee on Student Affiliates concerned itself with: (1) the promotion of student affiliate membership, (2) eligibility requirements for student affiliates, (3) publicizing and broadening services for student affiliates, and encouraging participation by student affiliate members in the Association's journals and professional meetings.

1. Considerable evidence was brought to the Committee's attention showing that eligible students in a number of colleges did not know of the possibility of student affiliate membership. In an attempt to correct this the Committee, in November, 1946 wrote to chairmen of psychology departments soliciting their cooperation. The letter summarized the advantages of student affiliate membership, detailed the application procedure and recommended enlisting the aid of the student president of the local psychology club in carrying information to other students. The Committee agreed that a similar letter should be sent out each Fall until participation of staff members in annual campaigns to enroll student affiliates became well established.

2. While the Committee has agreed to the impracticability of setting up well-defined qualifications for student affiliate members, it seemed advisable to prepare a general eligibility statement for the guidance of endorsers. The statement which the Committee recommends is as follows: A student affiliate applicant (a) must be endorsed by a member of the American Psychological Association and be judged by that member to have sufficient ability to continue with psychology as a profession, (b) must have completed at least his sophomore year with three courses in psychology and, (c) must have a satisfactory general average with a "B" average in psychology. While many aspects of this statement are unavoidably ambiguous, it should be helpful in marking off minimum standards.

3. The Committee continued its efforts to make known services already offered by the Association to student affiliates, to broaden these services and to encourage participation in the Association's activities. The principle steps taken were as follows:

(a) Discussion meetings with student affiliates were held at the meetings of the Eastern and Midwestern Psychological Associations. Members of the Committee led these discussions, asking student affiliates for their suggestions about student needs and interests.

(b) A symposium on job opportunities and training facilities has been scheduled for the current meetings, with five particularly well-qualified members of the Association participating. Emphasis will be upon question answering.

(c) At the suggestion of the Committee, the AMERICAN PSYCHOLOGIST plans in the Fall of 1947 to institute a student affiliate page. Included on this page will be (1) notices of assistantships, fellowships, scholarships, internships, etc.; (2) job opportunities in the field for young men and women at or below the M.A. level; (3) references to articles on career planning; (4) announcements and reports of student affiliate sessions at regional and American Psychological Association meetings; (5) announcements of the plans of the Committee on Student Affiliates and (6) notes and news of special interest to affiliates. Readers will be encouraged to send to the AMERICAN PSYCHOLOGIST items which they believe to be of interest. An article describing the purpose of this page will precede its appearance.

(d) Through the medium of the student affiliate page and student affiliate meetings, material of value to career planning in psychology will be brought to the attention of student affiliate mem-

bers. Already available for this purpose are the recent articles by Shartle and Sears on psychological occupations and professional training facilities, respectively. These will be supplemented by an extensive bibliography on career planning scheduled for an early issue of the AMERICAN PSYCHOLOGIST and a possible pamphlet on psychological specialties which the Association may sponsor.

Work has been initiated but not completed on a number of additional matters brought to the Committee's attention by Dr. Wolfle and by student affiliate members.

Much credit for the activities undertaken by the Committee should go to its four student members who have been active and helpful participants in its work throughout the year.

Respectfully submitted,

Robert E. Dixon (student member)
Francis P. Robinson
Walter C. Shipley
Margaret Shuttleworth (student member)
Lawrence Siegel (student member)
Robert Tryon
Frank Vanasek (student member)
Beth Wellman
Stuart Cook, *Chairman*

REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

To the Council of Representatives of the American Psychological Association:

During the past several years while our Association has been in process of effecting an extensive reorganization, attention of officers and many committees has largely been focused, of necessity, on pressing matters pertaining to the internal operation of a highly complicated structure. As solutions of these administrative problems are found and as appropriate routines are developed and applied, a greater proportion of the time and energies of officers and committees will be available for consideration of professional as well as organizational affairs.

Among important professional problems to which the Association as a whole and especially those divisions interested in the applications of psychology should begin to devote sustained attention are policies and practices relating to public education and public relations. Your committee believes that more widespread and systematic work than has so far been attempted needs to be done to promote the immediate and long-range interests of psychology as a science and as a profession. A large and growing professional group can not conduct its relations with the general public and its many specific publics on a casual basis if it hopes to be maximally effective.

Nor is it sufficient that a small committee be appointed annually to consider recommendations for improving the public relations of the profession. Unless effective machinery for implementing such proposals can be put into operation, they will bear little fruit. Thus, the Committee on Public Relations at the close of the year 1944–45 submitted a report recommending that "a number of specific procedures be further examined as possible means by which public education regarding psychology could be bettered." In its report for 1945–46, the Committee relates that an attempt was made to discuss these proposals with the Policy and Planning Board at the interim meeting of the Council at Columbus. But "because of pressing business relating to other affairs of the Association, detailed attention could not be given to public relations problems at that time." Meanwhile the Committee remained relatively inactive for almost a year. It recommended that its successor try to hold another joint meeting with the Policy and Planning Board, and with the Executive Secretary, for a discussion of the Association's future activities in the fields of public education and public relations.

It was not feasible for the Committee to plan such a joint meeting this year. After correspondence with committee members, it was possible, however, for the Chairman to arrange a meeting with the Executive Secretary and one other member of the Committee at Atlantic City in April 1947. Major attention at this meeting was given to a discussion of means by which more extensive public relations activities than those now being carried on by the Executive Secretary's Office could be initiated and given continuity of effort. Subsequent discussion by the Committee resulted in the drafting of the following recommendations:

OPERATIONAL MACHINERY

1. It is recommended that the present Public Relations Committees be enlarged to include, ex-

officio, the Secretary of the Policy and Planning Board (to insure effective liaison with that Board) and the President-Elect of the Association (who presumably would have sufficient time and interest in public relations to make valuable suggestions on policy matters). The function of this committee should be to provide basic continuity of objective, effective liaison between the separate parts of the Association and the policy-making bodies with respect to public relations activities, and a source and reservoir of suggestions and proposals for future action.

2. It is recommended that in the Office of the Executive Secretary there be employed one full-time assistant to work on promotional activities and public relations. Since the APA can not at this time afford to employ an expert in this highly-priced field, we should not seek a professionally-trained, experienced specialist, but rather a young person with some graduate work in psychology, ability to write and to speak effectively, of high social intelligence and with a genuine interest in the advancement of psychology as a profession. This person's job would include such activities as assisting the Executive Secretary in implementing committee proposals approved by the Board of Directors, preparing news releases on psychological matters of public interest, maintaining a "morgue" for publicity purposes containing up-to-date biographical material and photographs of all members of the Association, preparing popularly written informational pamphlets, assisting in research on public relations and public education problems.

3. It is recommended that an Advisory Committee on Promotional Techniques and Procedures be appointed to aid the Executive Secretary and his public relations assistant. This committee should consist of three or more members of the APA who themselves are operating specialists in this field or who are thoroughly familiar with the problems and who possess effective contacts. The function of this committee would not be policy determination. These experts are too busy with their own enterprises to take an active operational part in APA promotional problems, but they could be brought together at an occasional luncheon or dinner as well as consulted in individual conferences. Their function would be to furnish ideas, suggest ways and methods, and give critical advice on suggested programs.

4. It is recommended that a group of standing committees on relations with other professions be appointed by the Association. These committees should carry on public relations activities similar to those performed in the American Association for Applied Psychology by a group of committees of this type. They should work on problems of mutual interest to other professional organizations through joint committees, arrange for participation of psychologists in professional conferences of other organizations, prepare and staff exhibits of psychological books, tests, and other materials at conferences of professional associations in their field of interest, work for legislation of mutual benefit to psychologists and members of other professions. Included in this group should be committees on relations with the medical profession, with the engineering profession, with the education profession, with the legal profession, with the social work profession, with the library profession, with economists, sociologists, etc. Chairmen and members of these committees should be chosen from among APA members who are specializing in appropriate applied fields or whose work brings them in close contact with members of other professions. These committees might be set up as subcommittees of the Committee on Public Relations.

5. It is recommended that divisions of the Association interested in the applications of psychology in various fields consider appointing divisional committees on public relations. These committees could perform a valuable service in bringing to the attention of the Public Relations Committees of the Association and of the Executive Secretary ways and means by which public education and public relations in their respective fields could be improved. They might also keep members of their divisions informed of publication outlets in journals that cut across their field of specialization and that welcome contributions from psychologists.

It might seem at first glance as though these recommendations, if adopted, would lead to overlapping or duplication of function among the several groups of committees and individuals concerned with public relations. To prevent this, all proposed activities of these groups should be cleared through the central Committee on Public Relations. The guiding idea behind these recommendations is that effective public relations can not be achieved by a large organization such as ours through the efforts of one small

committee working in isolation. Public relations are everybody's business. Every psychologist in his own professional relations is constantly building either good will or ill will for his profession as well as for himself. We need to make the Association as a whole, the divisions, and our individual members "public-relations-conscious."

SPECIFIC PUBLIC RELATIONS ACTIVITIES

In addition to the above recommendations relating to operational machinery, the Committee wishes to offer some specific proposals for projects that in its opinion would greatly strengthen the public relations program of the Association if undertaken at this time.

1. It is proposed that the Policy and Planning Board be requested to work out broad policy statements and criteria for the use of the mass media of newspaper, magazine, radio, and motion picture to acquaint the general public with the activities and research findings of psychologists. Such criteria would be concerned with the level of information to be disseminated, the amount of confirmatory work necessary before research findings are released, the extent to which psychological findings should be given publicity in relation to their bearing on social problems, governmental policy, etc., the policy to be followed in debunking pseudo-psychological claims.

2. It is proposed that the Board of Editors be requested to study the problem of how to make psychological materials available to the general public and to related professional groups in the other sciences and applied fields. The suggestion that the APA publish either a popular journal on psychology or a series of syndicated newspaper articles is discussed periodically. It is usually agreed that the idea is a good one, that it would be expensive but possible, and that further consideration should be given to the proposal. But no action has ever been taken. In the opinion of this Committee, working plans for the establishment of a popular journal should now be prepared and submitted through the proper channels for definite action by the Association.

3. It is proposed that the Committee on Public Relations for 1947–48 undertake, with necessary assistance from the Executive Secretary's Office, a survey of the public relations policies, programs, machinery and procedures of a number of other professional associations. Much of value for our own profession may be learned from the experience of other organizations in building effective public relations programs.

4. It is proposed that the Board of Directors consider setting up a continuing program of research to be conducted by the Association on problems relating to our public relations policies and practices. As pointed out in a recent publication of the Russell Sage Foundation,[1] "when professional associations are viewed as a component part of an ever-changing, on-going society, and when they are seen as acting upon that society and being in turn acted upon by it, the need for frequent and profound self-examination becomes at once apparent." The American Medical Association is cited as an example of an organization which lost public sympathy because of failure to be sufficiently introspective about its public relations. Disturbed by the loss of sympathetic support from important sections both of the laity and its own membership because of its attitude on the problem of the distribution of medical care, the AMA "asked for an examination of its public relations by Raymond Rich Associates, a recognized agency which acts as counsel in matters of management and public relations to non-profit organizations serving the public interest. That agency maintains that desirable public relations can be built only on the basis of 'positive and constructive policies; effective, adequate and coordinated action; balanced and efficient promotional and interpretive facilities.' Hence the research conducted by these technical experts went far beyond consideration of public relations, and resulted in a series of recommendations for considerable change in the organizational structure, personnel, and various aspects of the program of the AMA. Recommendations relating to structure and personnel are already being acted upon. If the Association is able to reorient its philosophy and to engage in a dynamic program, it will, in the eyes of its critics, have moved on to the highway along which a number of other professional groups are traveling."

The problem of the distribution of psychological services is already beginning to be discussed in some quarters. It is highly desirable that the APA avoid any public behavior with respect to this question that would cause it or its members to lose public

[1] Brown, Esther Lucile. The Use of Research by Professional Associations in Determining Program and Policy. Russell Sage Foundation, New York, 1946. 39 pp.

sympathy or confidence. An even more serious and immediate problem for the profession is our inability to meet increasingly heavy demands for psychological services with an adequate supply of trained personnel. Untrained and poorly-trained personnel (not to mention the quacks and fakirs) will as a result attempt to solve difficult problems which they are not competent to handle. It is exceedingly important, therefore, that responsible psychologists should do everything possible to educate the public on what constitutes sound psychological knowledge and procedure. At the very least, we should take effective steps to make sure that we go on record in many public places lest, when a popular reaction sets in, criticism and loss of confidence be indiscriminatingly applied to all who bear the label of psychologist. It seems evident that a dynamic public relations program, combined with continuing research on the effects of this program upon public opinion, is urgently needed by our profession.

Respectfully submitted,
Daniel Katz
Sidney L. Pressey
Alice I. Bryan, *Chairman*

REPORT OF THE COMMITTEE ON PUBLICATIONS

To the Council of Representatives of the American Psychological Association:

1. The Committee on Publications offers the following list of nominees for the editorship of the *Journal of Applied Psychology:*

George K. Bennett, Psychological Corporation
John G. Jenkins, University of Maryland
B. V. Moore, Pennsylvania State College
Donald G. Paterson, University of Minnesota
Marion W. Richardson, Richardson, Bellows, Henry and Co.

2. Your committee recommends that the *Psychological Monographs* and the *Applied Psychology Monographs* be combined; that the new series be known as *Psychological Monographs, General and Applied;* and that the present editors continue as co-editors.

3. The committee, after consultation with the Board of Editors, recommends that authors publishing in Association journals pay full charges for any alterations they may make in the galley proof of their articles; but as soon as possible the present charges to the author for cuts and tabular material be abolished.

4. Your committee has considered carefully the question of paid prior publication in Association journals. Prepared statements presenting both sides of the question will appear in the AMERICAN PSYCHOLOGIST, and it is suggested that consideration of the question be placed on the agenda of the interim meeting of the Board of Directors.

Respectfully submitted,
Gordon W. Allport
Frank A. Beach
John F. Dashiell
Alvin C. Eurich
Francis W. Irwin
William A. Hunt, *Chairman*

REPORT OF THE BOARD OF EDITORS

To the Council of Representatives of the American Psychological Association:

The Board of Editors has met twice since the last report to the Council. A joint meeting with the Committee on Publications was held in Philadelphia on September 7, 1946, and the annual spring meeting of the Board occurred in New York on April 11, 1947. Official minutes of these meetings are in the hands of the Executive Secretary.

The joint meeting appears to have succeeded in clarifying the distinctions between the two groups which are concerned with the Association's publications, and to have made for harmonious cooperation between the two groups. There is some sentiment in favor of establishing such a joint meeting on an annual basis, and arrangements for such a meeting at the Association's convention in September, 1947, are being made.

At the spring meeting of the Board, reports of the condition of each of the journals were received, approved, and appended to the official minutes. A detailed report upon the financial condition of the journals was made by Dael Wolfle, the Executive Secretary, and was approved.

A resolution was made and carried unanimously expressing the grief of the Board upon the untimely death of Willard L. Valentine, for many years the Business Manager of the Association's publications, and the Board's appreciation of his valued services and fellowship; that a copy of this resolution be spread upon the minutes, and that a copy be trans-

mitted, with the sympathy of the Board, to Mrs. Valentine. These actions were performed.

While considerable discussion occurred concerning publication lag, costs to authors of publication, advertising in the journals, and various policies of the journals, one issue has been raised on which sharp division of opinion appeared. At both the joint meeting and the spring meeting the question was raised whether the policy of some of the journals giving "immediate publication" to authors who paid the full cost of publication of their articles should not be rescinded. A motion to rescind this policy was lost at each of the two meetings. At the spring meeting, a motion appointing Donald G. Paterson a committee of one to draw up a resolution presenting the case for continuation of the policy was carried by a unanimous vote of those present. (One member of the Board of Editors was absent). Such a statement has been prepared and copies have been transmitted to the Executive Secretary and to William A. Hunt, Chairman of the Committee on Publications. This statement points out the value to readers, authors, and subscribers of a policy which adds pages to volumes of the journals at no extra cost to subscribers and which assists in the reduction of lag in publication.

Respectfully submitted,
Gordon W. Allport
Herbert S. Conrad
John F. Dashiell
Herbert S. Langfeld
Lyle H. Lanier
C. M. Louttit
Donald G. Paterson
Laurance F. Shaffer
Calvin P. Stone
Dael Wolfle
Francis W. Irwin, *Chairman*

REPORT OF THE CONFERENCE OF STATE PSYCHOLOGICAL ASSOCIATIONS

To the Council of Representatives of the American Psychological Association:

At Philadelphia in September, 1946, the State Associations, previously meeting as an interim committee, adopted a temporary organization pending their formal affiliation. Permanent organization of the Conference, as directed by the 1946 meeting, was delayed by the slowness of the individual associations in completing their affiliation, informing your secretary of the basis of their representation, and naming their representatives to the Conference. It was not until June that these steps were completed so that a ballot could be sent out.

There are now (prior to the 1947 meeting of the Council of Representatives), 13 state associations affiliated with the APA and represented on this Conference. With several associations entitled to more than one representative, there are 18 members of the Conference. Inasmuch as the number of members of the constituent associations who are also members of the APA exceeds 800, the Conference is entitled to 6 representatives on the Council of Representatives.

Election of officers and representatives was held by nominating and final ballots, with the following results:

Chairman: John G. Peatman
Secretary: Gilbert J. Rich
Representatives: Marion A. Bills, Orlo L. Crissey, John G. Darley, Stanley G. Estes, John G. Peatman, Gilbert J. Rich

The Conference also voted to recommend a change in the By-Laws of the APA so that the provinces of Canada rather than the Dominion as a whole should be considered as states for the purpose of organization. This was because the Province of Quebec has already organized its own association.

The following committees have been established and will report at the annual meeting of the Conference tomorrow afternoon, September 11, 1947:

Committee on Policy and Planning and State Certification: Wallace H. Wulfeck, Chairman;
Committee to Aid in the Formation of New State Societies: Orlo L. Crissey, Chairman;
Committee on By-Laws: Harriet O'Shea, Chairman.

Respectfully submitted,
Gilbert J. Rich,
John G. Peatman, *Chairman*

REPORTS OF SPECIAL COMMITTEES

REPORT OF THE COMMITTEE ON PRECAUTIONS IN ANIMAL EXPERIMENTATION

To the Council of Representatives of the American Psychological Association:

Through action taken by its Council of Repre-

sentatives at the annual meeting in 1946 the American Psychological Association became a non-contributing member of the National Society of Medical Research. This influential organization is constantly active in combating legislation designed to curtail the legitimate use of animals in scientific research. The chairman of the Committee on Precautions in Animal Experimentation has been kept informed concerning bills introduced into various state legislatures which might endanger psychological investigations. Fortunately such bills have been few and they have been defeated when they appeared.

The Bureau of Legal Medicine and Legislation continues to cooperate with your Committee by sending notice of legislation bearing upon the question of animal experimentation.

Your Committee requests that when any member of the American Psychological Association learns of activities likely to lead to legislative action against the procurement or use of animals for psychological research he communicate promptly with any Committee member, so that action can be taken to notify responsible legislatures of the dangers inherent in any such prohibitions.

Respectfully submitted,
Howard S. Liddell
Robert H. Bruce
Frank A. Beach, *Chairman*

REPORT OF THE AUDIO-VISUAL AIDS COMMITTEE

To the Council of Representatives of the American Psychological Association:

The Audio-Visual Aids Committee has increased its activity during 1946–47 over previous years. Developments have occurred primarily as a result of the motivation and interests of individual members rather than from organized concerted efforts of the group.

The two principal efforts of the AVA Committee have been (1) to promote fundamental research in audio-visual materials and procedures, and (2) to stimulate the improvement of instruction in psychology by all means but especially by the effective use of audio-visual media. Several members are already heavily engaged in basic research on sound films and other members are beginning intensive and extended investigations in this field. Furthermore, members of the Committee are engaged in both the production and distribution of films and instructional aids in psychology and related fields.

The AVA Committee has given advisory and evaluational services to several agencies and institutions. It has taken the initial step toward collecting, processing, and distributing historical psychological films. The Committee has attempted from time to time to urge that useful government films produced during the war be made available for instructional purposes. Work has been done with development organizations, both private and public, where the interests of the Association have been involved. The AVA Committee has been led to see that a desirable extension of its activities should include the employment of suitable audio-visual materials in clinical procedures, especially in psychotherapy. Film exhibit programs have been arranged for the Eastern Psychological Association, the American Psychiatric Association and the Annual Meeting of the American Psychological Association. Finally, members of the Committee have been instrumental in expanding and improving the services of the Psychological Cinema Register.

RECOMMENDATIONS

1. That the Association support the AVA Committee with adequate funds and other cooperation in order to accomplish the production of one short sound-film subject each year of important men and developments in the fields of psychology.

2. That the Association authorize the AVA Committee to explore the possibilities of audio-visual materials in clinical fields.

3. That the Association arrange to support the AVA Committee in its efforts to arrange for the wider use of films produced by public agencies.

4. That the AVA Committee be effectively represented on the Program Committee of the APA Annual Meetings as well as on boards or committees having to do with plans and policies.

That the Association instruct the AVA Committee to submit plans and estimates for the production of a public information film designed to demonstrate the place of psychology among related professional fields.

6. That Dr. Elias Katz be added to the present membership of the AVA Committee.

Respectfully submitted,
Kenneth H. Baker
Lester F. Beck
Stephen M. Corey
Wayne Dennis
Mark A. May
C. R. Carpenter, *Chairman*

REPORT OF THE COMMITTEE ON GRADUATE AND PROFESSIONAL TRAINING

To the Council of Representatives of the American Psychological Association:

At your request, the Committee undertook the further study of graduate training facilities in the field of clinical psychology. Detailed questionnaires were prepared for use by individual departments in presenting data concerning their staff, curricular offerings, and practicum facilities. On January 26 and 27 a meeting of the full Committee was held in Chicago in order to evaluate the data reported on these questionnaires. Thirty-three institutions had sent in material and on the basis of these, the Committee established a series of criteria by which it would be possible to determine whether a given institution had appropriate facilities for doctoral training in the clinical field. The data from the thirty-three institutions were then reexamined and each school was evaluated as to whether it fulfilled the criteria or not.

Evaluation of other institutions was continued throughout the year on a mail basis. By August 1st, forty-three institutions had submitted the necessary data concerning their programs and thirty-two of these were judged to be sufficiently close to fulfilling all the criteria that the Committee felt warranted in recommending to the Veterans Administration that training contracts be written with them. Of these thirty-two institutions, however, only twenty-one completely fulfilled all the criteria. Since a full report of this accreditation procedure has recently been published (Sears, R. R., Clinical Training Facilities: 1947. AMERICAN PSYCHOLOGIST, 1947, **2**, 199–206), it is unnecessary here to go into all the details of the project. Since the publication of that article, three additional institutions have been accredited (University of Chicago, Michigan State College, and Princeton University).

This work has drawn heavily on the services of department chairmen during the year, and without their patience, understanding, and dogged perseverance, the Committee's task could not have been completed.

A second matter that has attracted the Committee's earnest attention is that of the sex distribution among psychologists. In contrast to the so-called hard sciences, such as physics and chemistry, psychology has attracted a large proportion of women into graduate work. Rapidly developing changes in the profession's training program may well lead to changes in the sex distribution. Your Committee, therefore, felt it wise to get as much data on the relation of sex to careers in psychology into the literature as possible. E. G. Boring and Alice Bryan offered to make more detailed analyses of data which they had previously collected and the Committee has provided funds for the necessary statistical work.

A third working project of your Committee has been related to the selection of graduate students. E. Lowell Kelly, a member of the Committee, was appointed chairman of a subcommittee to consider this matter. Dr. Kelly is director of a large research project financed by the Veterans Administration, and his subcommittee has served essentially as a liaison between the Committee on Graduate and Professional Training and the experimental work that is being carried out on that project. Data are still being collected and a report will not be available for some little time.

Respectfully submitted,
John G. Darley
E. Lowell Kelly
Elaine Kinder
Jean W. Macfarlane
Donald G. Marquis
Bruce V. Moore
Marion W. Richardson
Carroll L. Shartle
Robert R. Sears, *Chairman*

REPORT OF THE COMMITTEE ON UTILIZATION IN PSYCHOLOGY OF SURPLUS WAR MATERIALS

To the Council of Representatives of the American Psychological Association:

During the past year very few inquiries have been received from psychologists regarding surplus war

materials and there have been no new developments regarding the sources of such materials.

It is recommended that the Committee be discontinued.

Respectfully submitted,
Charles W. Bray
Paul M. Fitts
Carroll L. Shartle
Arthur W. Melton, *Chairman*

REPORT OF THE COMMITTEE ON CLINICAL PSYCHOLOGY

To the Council of Representatives of the American Psychological Association:

The Committee on Clinical Psychology was appointed to clarify the relationships between psychology and psychiatry by working in cooperation with a committee of the American Psychiatric Association. During 1946–47, the Committee had no physical meeting, and has not met with the coordinate committee of the other Association. Nevertheless, the year has not been entirely devoid of progress.

On December 15, 1946, the Council of the American Psychiatric Association accepted the report of its Committee on Relation of Psychiatry to Psychology, which gave official endorsement to the principles agreed upon by the committees of the two associations, and included in last year's report of this committee (AMER. PSYCHOLOGIST. 1946, **1,** 520–522).

During the year, steps have been taken leading to a second meeting with the committee of the American Psychiatric Association. There has been considerable correspondence with the Committee. The Chairman has exchanged numerous letters with Dr. James S. Plant, Chairman of the Psychiatric Association's committee, and has had two long conferences with him. A number of complications have prevented a joint meeting of the two committees in the spring or summer, but a tentative date has now been set for a meeting in October, 1947. It is expected that the topics for discussion will include the practice of psychotherapeutic counseling by psychologists, and the interprofessional ethics of psychiatry and psychology.

The Committee recommends that it be continued. Because the Committee's title is subject to confusion with certain other committees, it is recommended that the committee be redesignated the *Committee on the Relation of Psychology to Psychiatry.* It is further recommended that funds be appropriated to defray the travel expenses of members to a joint meeting with the psychiatrists.

Respectfully submitted,
William A. Hunt
Carlyle Jacobsen
Donald G. Marquis
James G. Miller
Frederick C. Thorne
Laurence F. Shaffer, *Chairman*

REPORT OF THE COMMITTEE ON INTERNATIONAL PLANNING IN PSYCHOLOGY

To the Council of Representatives of the American Psychological Association:

In the last annual report it was stated that the Committee at their meeting in New York on April 27, 1946 went over letters received from abroad and decided on the policy to be followed in meeting the requests for books by the foreign psychologists. It was decided to recommend that the back numbers of the publications of the American Psychological Association from 1939 only should be sent abroad, and that they should be supplied for the most part to universities and other institutions and not to individuals. A list of universities to which to send magazines has been sent to Wolfle. This has been augmented throughout the year. A number of foreign institutions have already been supplied and letters of gratitude have been received.

A meeting was held on Wednesday, September 4, 1946. The meeting started as a joint meeting with a similar committee of the Society for Psychological Study of Social Issues, at 5 p.m. at Houston Hall, University of Pennsylvania. Yerkes, Hunter, Langfeld, Bruner, Goodwin Watson, and Gardner Murphy were present. In a discussion in regard to the next International Congress of Psychology, Edinburgh was favored over Stockholm since the Congress was to have been held there and had to be postponed on account of the war. It was suggested that the fund in the American Psychological Association earmarked from the International Congress at Yale in 1929 be used to support the coming International Congress. Among other things, the expenses of some foreign delegates might be defrayed. The

Chairman was instructed to prepare a list of foreign psychologists, together with their addresses, to be published in the AMERICAN PSYCHOLOGIST. Yerkes, Hunter and Langfeld met again later in the evening to discuss the activities of the Committee. The main matter considered was the International Congress in 1948.

A second meeting of the Committee took place at lunch time on April 19, 1947, in the National Academy Building in Washington. Present were Professors Yerkes, Miles, H. S. Langfeld, Chairman; invited: Dael Wolfle, and Miss Margaret Hall, who has been appointed by the National Research Council Chairman of a Subcommittee on Latin-American Psychology.

The Committee approved the suggestion that Dael Wolfle be asked to have prepared a list of important books in each of the fields of psychology to be published in the AMERICAN PSYCHOLOGIST. This list might well be prepared by the various divisions of the American Psychological Association.

The Committee discussed the question of the sum of $3327.83 which was put at the disposal of the Permanent Secretary of the International Congress by the American Psychological Association. It was proposed that the Chairman obtain by letter the opinion of the various members of the Committee as to the best use of this fund. It has finally been decided to put this sum at the disposal of Dr. Drever and the local committee of the International Congress at Edinburgh with instructions to subsidize a few outstanding foreign psychologists to the meeting.

The Committee discussed the question of establishing an International Union of Psychology. It was the opinion of the members that the possibilities should be thoroughly investigated and the Chairman was instructed to obtain the opinion of the various officers of the National Research Council.

The Committee discussed the question of accepting foreign affiliates of the American Psychological Association. It was the opinion of the Committee that any member of a recognized foreign psychological association should be considered eligible and that other persons should be vouched for by a well-known psychologist of the individual's country.

The Chairman has continued correspondence with psychologists abroad, especially with Professor Drever in regard to the International Congress, which is gradually taking shape. The Chairman has been appointed Permanent Secretary of the International Congress of Psychology to fill the vacancy caused by the death of Professor Ed. Claparede. He is thus able to keep in close touch with the development of the 1948 Congress.

Assistance has been given to the Secretary of the American Psychological Association in forming a list of foreign psychologists to be invited to the September, 1947 meeting of the Association. Miss Margaret E. Hall, Chairman of the Subcommittee on Latin-American Psychology, has given assistance in regard to Latin-American psychologists. The Chairman has sent invitations to foreign psychologists on this list to attend the American Psychological Association meeting in Detroit in September. These invitations are still going out.

On June 23, the American Psychological Association, through the efforts of the Committee on International Planning for Psychology, was the recipient of a grant of money with which to invite some eminent foreign psychologists to attend the annual meeting in Detroit. It is hoped that arrangements can be made for the visiting foreigners to remain in the United States for from one to three months, to visit places in line with their special interests.

It is recommended that the Committee be continued.

Respectfully submitted,
Walter S. Hunter
Walter R. Miles
Robert M. Yerkes
Herbert S. Langfeld, *Chairman*

REPORT OF THE COMMITTEE OF UNIVERSITY DEPARTMENT CHAIRMEN

To the Council of Representatives of the American Psychological Association:

The Council in its annual meeting 4 September 1946 voted that a Committee of University Department Chairmen be constituted from the chairmen, or their representatives, of the departments of psychology in those universities which have conferred ten or more doctoral degrees in psychology during the period 1934 to 1942 as listed by E. L. Smith, *American Journal of Psychology*, 1944, **57**, 95; that

the Committee be authorized to increase its membership; and that the Committee study its field of activity and consider plans for formation of an independent Association of Graduate Departments of Psychology, or a permanent Committee of the Association.

A preliminary organization meeting was called on 5 September 1946 at the University of Pennsylvania. Chairmen of 30 departments were present.

General discussion led to the consensus that during the first year the Committee should devote its efforts to the formulation of plans for its own organization and exploration of its possible functions. Accordingly three subcommittees were selected as follows and asked to report at the next meeting in Detroit 12 September 1947: Subcommittee on Organization, G. Richard Wendt, Chairman; Subcommittee on Standards of Graduate and Professional Training, Robert A. Brotemarkle, chairman; Subcommittee on Selection of Students, Robert H. Seashore, chairman. Each subcommittee undertook a survey of the chairmen during the year.

Respectfully submitted,
Donald G. Marquis, *Chairman*

REPORT OF THE COMMITTEE ON STANDARDS FOR PSYCHOLOGICAL SERVICE CENTERS

To the Council of Representatives of the American Psychological Association:

1. At the 1946 meeting of the American Psychological Association, the present chairman and Dr. Jerry W. Carter, Jr., former chairman, were empowered to form a new committee to obtain data for a Directory of Psychological Service Centers. That this committee might represent the chief interests concerned, the secretaries of certain divisions, through the Executive Secretary, were requested to ask their respective divisions to make three nominations. The members who accepted, together with the original appointees and the divisions they represent, are as follows:

Jerry W. Carter, Jr., Clinical and Abnormal
Bertha M. Luckey, School Psychologists
Vernon P. Scheidt, Industrial and Business
C. Gilbert Wrenn, Counseling and Guidance
Robert A. Young, Consulting
Wm. Clark Trow, Educational (Chairman)

2. All nominations and acceptances were not received until February 7. Meanwhile, the Chairman, after correspondence with Dr. Carter and others, drew up a tentative questionnaire based on the one which the former committee had developed, and sent a copy to each member as soon as his acceptance was received. Comments and suggestions were incorporated and a revision was sent again to each member. The chairman meanwhile consulted with various persons, including an expert in machine tabulation, in order that the returns might be handled in this way should it prove desirable.

3. Since the form was larger than was originally expected, in order to include the data from which various aspects of the centers might be evaluated, it was decided on account of the costs involved not to send it out to all members with the 1948 Yearbook Questionnaire but instead to send it only to those who indicated thereon that they were directors of service centers and wished to be considered for inclusion in the Directory.

4. The criteria were arbitrarily set up and accepted by the committee that a service center should (1) include two or more psychologists operating at an established address, (2) one of whom should be a Fellow of the Association. A meeting of the committee is planned for the period of the 1947 APA meetings to discuss these criteria, plans for reporting results, the form of the Directory, and other matters. Committee members are being requested to include consideration of the Directory at their respective division meetings, particularly the criteria of inclusion. If opinion favors broadening the scope of the definition of service centers, postal cards can be sent to all members permitting further requests for the questionnaire. The instrument, at the present writing, is in the hands of the Executive Secretary for printing and distribution.

5. Recommendations. The committee recommends:

a. That it be officially appointed as now constituted.

b. That it be continued for another year.

c. That a budget of $500.00 be set aside for clerical assistance in tabulation.

d. That the sum of $2000.00 be tentatively allotted for publication of the Directory, the actual amount to be determined later, depending on its size,

printing costs, and whether or not it is to be distributed free of charge.

Respectfully submitted,
Jerry W. Carter, Jr.
Bertha M. Luckey
Vernon P. Scheidt
C. Gilbert Wrenn
Robert A. Young
Wm. Clark Trow, *Chairman*

REPORT OF THE AMERICAN BOARD OF EXAMINERS IN PROFESSIONAL PSYCHOLOGY

To the Council of Representatives of the American Psychological Association:

At the 1946 meeting of the Council of Representatives, your committee submitted certain recommendations for the establishing of the American Board of Examiners in Professional Psychology. This report was published in the November, 1946, issue of the AMERICAN PSYCHOLOGIST.

Your committee wishes to report that in keeping with the instructions by the Council, the following steps have been taken to effect the program adopted at that time:

(1) The Council of Representatives elected the initial members of the American Board of Examiners in Professional Psychology, and in accordance with the instructions issued to these members, they arranged and effected the incorporation of the American Board of Examiners in Professional Psychology in the District of Columbia.

(2) The American Board of Examiners has adopted a set of By-Laws in keeping with the preliminary By-Laws which had been approved by the Council of Representatives.

The American Board of Examiners has now completed its formal organization. The membership of the Board consists of:

Carlyle Jacobsen, President
George A. Kelly, Vice-President
John Darley, Secretary-Treasurer
John G. Jenkins
Marion A. Bills
David Wechsler
Carroll L. Shartle
F. L. Wells
David Shakow

The Board has held a two-day organizing meeting, has issued a general statement concerning certification, and has supplied necessary application blanks to those individuals who have indicated their intention to seek certification. It is expected that the initial group of diplomates may be designated this fall. Plans are being prepared for the conduct of examinations as may be needed in other instances during the year 1948. It is hoped that certification may be well advanced by the close of 1948.

(3) In keeping with the recommendation of this committee's report in September 1946, all preliminary correspondence and other records have been turned over to the permanent secretary of the American Board of Examiners. This committee of the American Psychological Association, therefore recommends that it be discharged.

Respectfully submitted,
Marion A. Bills
Alice I. Bryan
John G. Darley
William A. Hunt
John G. Jenkins
Laurance F. Shaffer
David Shakow
Carroll L. Shartle
Carlyle Jacobsen, *Chairman*

REPORTS OF APA REPRESENTATIVES TO OTHER ASSOCIATIONS

REPORT OF THE REPRESENTATIVES TO THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

To the Council of Representatives of the American Psychological Association:

The American Association for the Advancement of Science is established on the thesis that the unity of science consists in its method rather than in its material. It has thus been hospitable to all groups interested in serious and systematic inquiry into any aspect of the physical world or human affairs. It should be noted that membership is available to all persons associated with the APA by application and the payment of dues of $6.50 a year. This includes a subscription either to the weekly journal, *Science*, or the *Scientific Monthly*. From time to time, persons who have achieved outstanding status in the APA are nominated as Fellows to the AAAS. Very close to 1500 psychologists are represented in

the approximately 31,000 members of the Association. The new membership directory will include the names of scientists from every field of work who have affiliated themselves with the broad purposes represented by the Association.

As most psychologists know, the APA has rented quarters from the AAAS at 1515 Massachusetts Avenue, N.W., Washington 5, D. C. This relationship was commented on favorably at the annual meeting of the Council as a possible prototype for similar arrangements that might be perfected when a new building is possible.

The control of the affairs of the Association is vested in a Council composed of the President-elect, the President, the Retiring President, the vice presidents and secretaries of the sections, the Administrative Secretary, the General Secretary, the Treasurer, eight elected members of the Executive Committee, one fellow elected by each regional division of the Association, and the representatives of the affiliated organizations. During the current year, psychologists were represented on the council by Sidney L. Pressey, Vice-president of Section I, and by Harold E. Burtt, the Secretary of Section I. Jean Macfarlane and Willard C. Olson represented the American Psychological Association as an affiliated society. Psychologists also become represented in the activities of the Association through their membership in other divisions, affiliated societies, and by direct appointment and election. For example Walter Miles is a member of the Executive Committee and of the Publications Committee for *Science*. Officers of Section Q (Education) frequently are members of the American Psychological Association.

The 113th annual meeting of the Association was held December 26–31, 1946 in Boston, Massachusetts.

A number of the general sessions were devoted to the special research programs and projects under the direction of the army and navy. The principal speakers included high-ranking officers of the army, navy, and air corps.

The science and book exhibits were particularly interesting in their portrayal of recent developments. A special exhibit on the research program of the armed forces had been arranged. Psychologists were listed among the scientific workers being sought for various types of investigations.

A major feature of the meeting was the session Friday evening, December 27, in the Boston Symphony Hall. President James B. Conant presided at the meeting. Dr. Charles F. Kettering, Retiring President, presented a lecture on the theme "A Look at the Future of Science." The address was followed by a general reception.

Dr. Harlow Shapley, Director of the Harvard Observatory, addressed a joint meeting of the Society of the Sigma Xi and the American Astronomical Society on "Goals of International Science." His election as the new President of the Association for 1947 was announced. E. W. Sinnott of Yale University was named President-elect for 1948.

Issues involved in the establishment of a National Science Foundation were discussed in a series of meetings. Council passed a resolution calling for the formation of an Inter-society Committee for a National Science Foundation, appropriated funds, and instructed officers to issue invitations for a joint operation for action. Edmund Day, President of Cornell University, was subsequently elected Chairman, and Dael Wolfle, Executive Secretary of the APA, was made Secretary. The effective work of this Committee has been described in a series of notes in *Science*.

Section I (Psychology) arranged for seven sessions including concurrent ones and the Society for Research in Child Development, organized as a division of Section I, arranged for five additional ones. Sections I and Q (Education) met jointly at a Saturday evening session. Dr. Sidney Pressey, as retiring vice president of Section I, presented a paper entitled "Efficiency Engineering in the Educational Emergency." Dr. Guy T. Buswell, the retiring vice president of Section Q, presented a paper on "Perceptual Research and Methods of Learning." A concurrent session was held with other groups from the physical and social sciences on science legislation and problems of federal aid.

Edna Heidbreder of Wellesley College was elected as Vice-president and Chairman of Section I for 1947 and Harold E. Burtt continues as Secretary. W. A. Brownell of Duke University is Vice-president and D. A. Worcester is Secretary of Section Q for 1947. All are members of the APA.

The Association has sustained two losses by death in recent months. Psychologists in particular have reason to mourn the untimely death of Willard L. Valentine, Treasurer of the APA, on April 5, 1947.

He had served as Editor of *Science* since January, 1946. An obituary by Walter R. Miles was published in the June 27, 1947, issue of *Science.* Mildred Atwood, Assistant Editor of *Science* and long associated with the publication and other enterprises of the American Psychological Association is carrying on as the Acting Editor at this writing. Otis W. Caldwell, General Secretary of the AAAS, died on July 5, 1947 at the age of 77 years. He had spent a life in service to the dissemination of science and scientific method and the organization of science for effective service to mankind.

The 114th meeting of the Association will be held in Chicago December 26–31, 1947. The address of the Vice-president of Section I has been announced for the night of December 29 and plans for program sessions are under way.

Respectfully submitted,

Jean Macfarlane
Willard C. Olson

DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY, NATIONAL RESEARCH COUNCIL

The activities of the Division during 1946–47 have, to a large degree, reflected the changing conditions and demands of the postwar period. Several of the psychological committees which were so active during the crucial war years are no longer functioning but, on the other hand, the committee on the Selection and Training of Aircraft Pilots is continuing the basic researches which are as important to peacetime as to wartime flying. Fresh areas of interest are, at the same time, arising, such as the Coordinated Investigation of Micronesian Anthropology which has been promoted by the Pacific Science Board of the Council and the Pacific Committee on the Anthropological Sciences of the Division.

In anticipation of certain problems that seem bound to arise in the field of highly trained personnel, the Division gave consideration to the development of a research program on the selection of personnel for training in scientific research. At a conference on April 11, 1947, a group of psychologists and representatives of related fields agreed to recommend that a long-term psychometric study be initiated. At present support for the project has not yet been obtained.

These developments indicate the flexibility that is essential if the broad and continuing purpose for which the Council was organized are to be carried out.

Committee on African Anthropology. This committee has continued to promote interest in problems of African ethnology in this country. A "Finding List of African Films" to be circularized to departments of anthropology and other interested groups has been completed and a symposium on Africa was organized as part of the program of the American Anthropological Association at its annual meeting in December 1946. The papers will appear in a forthcoming number of the *American Anthropologist.*

Committee on Basic Needs in American Archaeology. This committee has a close working liaison with the joint Committee for the Recovery of Archaeological Remains which is composed of one representative each from the Society for American Archaeology and the American Anthropological Association, and two representatives from the American Council of Learned Societies. This liaison relationship serves to keep the National Research Council in close cooperation with conservation work in governmental and private archaeological research.

Committee on Child Development. The work of this committee is closely integrated with that of the Society for Research in Child Development. Space is provided by the Council for use of the Society's publication office. The Parents' Institute contributed funds for a conference of representatives of child research institutions on needs, policies, plans, and procedures in child development research that was held under the auspices of the committee in March.

Board on Clinical Psychology Advisory to the Surgeon General. Advice has been rendered to the Surgeon General on matters of organizational policy and personnel as well as on problems of follow-up on military personnel who were examined, diagnosed, and treated during the war.

Committee on the History of Psychology and the War. The Committee has continued to assemble the basic documents from which it can ultimately prepare a general history of the activities of psychologists in World War II.

Committee on International Cooperation in Anthropology. Through the generosity of the American Anthropological Association and the Viking Fund, grants have been made available to begin work on a

badly needed third edition of the *International Directory of Anthropologists*. The committee will have direct supervision of this project. One of the major considerations of this committee has been how to obtain publications for the depleted or destroyed libraries of foreign institutions, and how to get books to scholars who have been cut off from this source of supply during the war. Members of the committee have been responsible for a series of reports on "Anthropology During the War" which are being published in the *American Anthropologist*. Reprints of these have been sent to anthropologists all over the world. Yet to appear are reports on anthropology in the Arab World, South Africa, the Philippines, and possibly on Japan. Through the cooperation of Mlle. Yvonne Oddon, librarian of the Musee de l'Homme, Paris, it has been possible to gather detailed information on the fate of anthropological collections, libraries, and anthropologists in Germany. A member of the committee is responsible for the account of anthropological activities that appears annually in the Britannica *Book of the Year*.

Committee on International Cooperation in Psychology. Like the above committee, this committee has been concerned with meeting requests for books by foreign psychologists. The decision was not to send publications to individuals but to universities and institutions and a list was prepared. With the cooperation of the American Psychological Association, back numbers of publications will be sent to those institutions listed.

During the year it was agreed that the former Committee on Latin American Psychology be made a subcommittee of this committee. Membership to this subcommittee has now been appointed and through correspondence a channel will be opened that will make it possible for psychologists in Latin American countries to keep in close touch with their North American colleagues.

Committee on Latin American Anthropology. Three subcommittees have been formed which are concerned with: 1) collecting information on current research projects in both the Americas for distribution to interested members of the profession; 2) promoting the interchange of students and faculty in anthropology between institutions in the Americas; 3) the supervision of microfilming documents on Middle American anthropology, a project which is being carried out at the University of Chicago by a committee member.

Pacific Committee on the Anthropological Sciences. Subsequent to the Pacific Science Conference which was sponsored by the Council in June, 1946, a Pacific Science Board was established as a general committee. This Board negotiated with the Navy Department for a grant of funds to initiate a "Coordinated Investigation of Micronesian Anthropology," and assured the cooperation of various universities and museums, and additional funds from foundation sources. Applications from twelve institutions for participation in this investigation were referred to the Pacific Committee on the Anthropological Sciences for recommendation, this committee having been reconstituted from the Committee on the Anthropology of Oceania, which was set up in the Division during the war. The number of institution-sponsored participants amounted to forty-four, most of whom left for Micronesia in June, 1947. This cooperative project is by far the largest of its kind in the history of Anthropology. It includes investigations in the field of ethnography, linguistics, personality psychology, and geography.

Committee on Selection and Training of Aircraft Pilots. The Civil Aeronautics Administration of the U. S. Department of Commerce continued its support of the research of this committee. During the year the committee virtually completed its research on the relation between visual capacity and the ability to learn to fly. Two new experimental studies were initiated: 1) on the qualifications for safe airline pilots and procedures for selection, certification and upgrading of airline pilots, and 2) on the ability to recognize incipient stalls. In addition the committee surveyed the literature relevant to problems of pilot fatigue, prepared a compendium of useful tricks for the use of pilot instructors and, at the request of the Civil Aeronautics Administration, prepared a restatement in lay terms of the medical requirements under the Provisional International Civil Aviation Organization in comparison to present CAA regulations. The publications of reports on these and previous activities of the Committee brings its series of technical reports to a total of seventy-one.

Respectfully submitted,

A. Irving Hallowell, *Chairman*
Charles W. Bray, *Vice-chairman*

REPORT OF THE REPRESENTATIVE TO THE SOCIAL SCIENCE RESEARCH COUNCIL

To the Council of Representatives of the American Psychological Association:

Since the SSRC is concerned with factors affecting research in its seven constituent societies (sociology, psychology, anthropology, economics, political science, history, and statistics) as well as in such fields as geography and law, its most distinctive functions are those involving all of the social sciences taken together, or those involving the interdisciplinary emphasis in social science research. During the past year the SSRC has been concerned with attempts to define and gain support for the proper role of social science in modern society. The Council has initiated several important projects in this general area.

Donald G. Marquis is currently engaged in a general appraisal of the status of social science knowledge and of the manner in which it is being applied toward the solution of social problems. The study is being conducted under SSRC auspices with funds from the Carnegie Corporation.

Talcott Parsons, Chairman of the Department of Social Relations at Harvard University, is preparing a report for the Council's Committee on Federal Government and Research on the social sciences in relation to the federal government, with special emphasis on science legislation.

Elbridge Sibley of the SSRC staff is conducting an extensive study of the factors affecting the supply and training of personnel in social science fields. He is at present completing the analysis of data from a questionnaire distributed to graduate students involving their experience as students. The SSRC has also been cooperating with the National Research Council, the American Council of Learned Societies, and the American Council on Education in studies of the supply and utilization of scientific and scholarly personnel, with particular reference to the significance for social science research of the military fellowship and scholarship programs for training large numbers of superior students for military specialties.

The SSRC is serving as fiscal agent in the preparation of a volume by Stuart Chase on the contributions of the social sciences to human welfare, particularly as illustrated by the role of social science in the conduct of World War II.

The Committee on Social Aspects of Atomic Energy initiated a study sponsored by Cornell University of public reactions to the atomic bomb as revealed by intensive and extensive opinion surveys made immediately before and after the Bikini experiments. The extensive surveys of opinion were supervised by Richard S. Crutchfield, while the intensive surveys were conducted by Angus Campbell and Patricia Woodward with the field work being done by the Survey Research Center directed by Rensis Likert. A report of the surveys may be obtained from the Department of Sociology and Anthropology of Cornell University.

In order better to inform social scientists about its work, the Council now publishes the *SSRC Items* which reports current activities of the Council. The first number appeared in March, 1947, and the third number is in press. *Items* is distributed free to social scientists who have participated in the activities of the Council, and to others who are interested in its work.

COUNCIL PERSONNEL ITEMS

During the past year, the three representatives of the APA on the Board of Directors of the SSRC were Willard C. Olson, Carl I. Hovland, and Robert R. Sears. Harold E. Jones was appointed Pacific Coast Representative of the Council, to aid in organizing and directing the various Council activities in that area. During the year, A. T. Poffenberger served as chairman of the Council's Committee on Problems and Policy. Glen L. Heathers joined the staff of the Council in August, 1946 to serve as research assistant to the Executive Director, Donald Young.

The following psychologists have served on Council committees during the year: Hadley Cantril, George Gallup, Carl I. Hovland, J. McV. Hunt, Paul F. Lazarsfeld, Rensis Likert, D. B. Lucas, Donald G. Marquis, Charles I. Mosier, Robert R. Sears, Carroll Shartle, Frank Stanton, Dael Wolfle, and Robert M. Yerkes.

The Executive Director of the Council, Donald Young, a sociologist formerly with the Department of Sociology at the University of Pennsylvania, has announced his resignation from the Council effective September 1948. He will at that time assume leadership of the Russell Sage Foundation. A committee of the Council has been appointed to appraise the work of the Council and to make recommendations for future organization and leadership.

FELLOWSHIPS AND GRANTS-IN-AID

The SSRC awards research training fellowships to outstanding pre- and post-doctoral students to advance their training for research careers. The programs for which aid is given are in each case adapted to the individual's needs for further training. During the past year, the following psychologists received aid from the Council under its program of demobilization fellowships: Donald T. Campbell, Robert Chin, Andie Knutson, Raymond G. Kuhlen, M. Brewster Smith, and C. Harold Stone. Regular SSRC research training fellowships were held by Lee Myerson and James M. Sakoda. The relatively small proportion of psychologists holding Council fellowships is evidently a result of the fact that few outstanding psychology students apply for such aid. This suggests either that they do not know the purposes and nature of the fellowships, or that they receive the needed financial support elsewhere.

In addition to its research training fellowships, the Council gives grants-in-aid (to a maximum of $1000) to mature research workers for the completion of projects under way. During the year 1946–47, 65 applications were received and 24 awards made. The three grants to psychologists were as follows: to Raymond B. Cattell, for testing the theoretical implications of certain techniques of attitude measurement; to Saul Rosenzweig, for constructing a children's form of his Picture-Frustration Test; and to Heinz Werner, for experimental studies of semantics and communication. Grants made the previous year went to J. P. Guilford for completing a factor analysis of Aircrew Classification Tests, to Saul Rosenzweig for an earlier stage of the study mentioned above, and to Robert Nevitt Sanford for a statistical analysis of data on social attitudes and personality factors.

The SSRC is cooperating with the National Research Council in a program of fellowships to provide post-doctoral research training in fields requiring both natural science and social science techniques. The fellowships will be open to natural scientists and social scientists of outstanding ability who have had two or three years of post-doctoral research. Priority will be given to combinations of training in biological or medical sciences on the one hand and in sociology, social anthropology, or social psychology on the other.

RESEARCH PLANNING COMMITTEES AND BULLETINS

A major part of the Council's work is performed by its research planning committees, usually composed of representatives of two or more social science fields. These committees are responsible for the SSRC bulletin series, which now contains fifty-seven volumes, most of which may be obtained at cost from the Council's New York office. The work of several of the research planning committees is of particular interest to psychologists.

The Committee on Analysis of Experience of Research Branch, Information and Education Division, ASF, of which Carl I. Hovland is a member, is preparing four volumes on the statistical studies made by The Research Branch during World War II. The first volume will deal with the adjustment of soldiers to Army life, the second with reactions to combat and its aftermath, the third with techniques for mass education, and the fourth with research methodology. Publication of the volumes is planned during 1948.

The Committee on Techniques for Reducing Group Hostility is responsible for Bulletin 57 of the Council series, written by Robin M. Williams of the Sociology Department of Cornell University and titled "The Reduction of Inter-group Tensions: a Survey of Research on Problems of Ethnic, Racial and Religious Group Relations." At the request of the Department of State and the Paris office of UNESCO, the committee has been engaged, during the past summer, in preparing a research memorandum on international tensions.

The Committee on Measurement of Opinion, Attitudes and Consumer Wants, whose membership includes Hadley Cantril, George Gallup, Carl I. Hovland, Paul F. Lazarsfeld, Rensis Likert, D. B. Lucas, and Frank Stanton, is currently supervising a two-year research program concerned with interviewer effects in attitude and opinion studies; data are being obtained by the National Opinion Research Center. Frederick F. Stephan, a Princeton sociologist, is directing studies of sampling and sampling methods for the Committee.

The Council has been granted $175,000 by the Carnegie Corporation for a two-year study of the American public library as a social institution. The study was planned by a committee representing several of the social sciences and is under the direction of Robert D. Leigh. The Survey Research Center of the University of Michigan will conduct a ques-

tionnaire study of users and non-users of libraries. Donald G. Marquis is a member of the Committee.

The Subcommittee on Adjustment in Old Age of the Committee on Social Adjustment added Robert R. Sears and J. McV. Hunt to its membership. It is currently engaged in revising for publication later this year its memorandum on research in the old age field. Members of the subcommittee are also preparing for early publication a report of research on the development of measures of adjustment in old age.

The Council is at present exploring the desirability of setting up a committee on the analysis of research needs in the development and evaluation of projective techniques of personality study and measurement.

Respectfully submitted,
Robert R. Sears

REPORT OF THE REPRESENTATIVE OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION TO THE AMERICAN DOCUMENTATION INSTITUTE

To the Council of Representatives of the American Psychological Association:

The American Documentation Institute has continued its various activities successfully during the past year. Historically the ADI has been responsible for the creation and establishment of the following:

1. The widely-accepted bibliofilm service pattern of extract microfilm copying in libraries.

2. The plan of auxiliary publication through microfilm and photoprints, and the prototype for more extensive utilizations, as for the issuance of enemy technical data by the Department of Commerce.

3. Apparatus for photographing and reading microfilm, and other photographic duplication apparatus.

4. Exploration of instrumentation and operation of world bibliography.

During 1946 the American Documentation Institute operated at a minimum level, with the following principal activities:

1. Auxiliary publication in cooperation with journals and institutions.

2. Provision of long runs of serials in microfilm.

3. A clearing house for information on various phases of documentation.

4. A medium of contact with foreign and international organizations concerned with documentation.

5. Publication of a *Catalog of Auxiliary Publications in Microfilms and Photoprints.*

At the annual meeting, held in Washington, D. C. in January, a proposal was presented by certain representatives for the creation of an "American Council of Documentation." Apparently this new organization, principally sponsored by Dr. Waldo Leland of the American Council of Learned Societies, would duplicate many of the generalized objectives of the ADI.

The following two resolutions were adopted at the meeting of the ADI:

RESOLVED, that the Board of Trustees be instructed not to take steps leading to the dissolution of the American Documentation Institute or the curtailment of American Documentation Institute activities.

RESOLVED, that whereas there is nothing to be gained by having in existence two organizations having the same functions, the Trustees should be instructed to work out a plan of coordinating the activities of the American Documentation Institute and the proposed American Council of Documentaton, and to report back to a meeting of the members of the American Documentation Institute.

Respectfully submitted,
Steuart Henderson Britt

REPORT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION DELEGATION TO THE INTER-SOCIETY COLOR COUNCIL

To the Council of Representatives of the American Psychological Association:

The activities of the ISCC for the year 1946–47 reflect a growing interest in color problems. Three meetings were held during that period, one October 2, 1946, the annual meeting February 23, 1947, and one April 25–26, 1947. In addition, programs on color were arranged for the Technical Association of the Pulp & Paper Industry, on Feb. 25th; for the American Ceramic Society on April 21; and for the Philatelic Centenary Exhibition at the Grand Central Palace May 17–25. Many of the papers presented at these meetings will be published by the societies concerned and will be distributed to ISCC delegates.

At the annual meeting in February, the Chairman of the Problems Committee, Michael J. Zigler, reported progress on five different problems under investigation by committees appointed by the ISCC.

Sidney M. Newhall, Chairman of the Subcommittee on Color Terms, reported that a revision of the 1939 report would be ready for publication soon.

Forrest L. Dimmick and Carl E. Foss, Co-Chairmen of the committee on a Color Aptitude Test, reported that a new edition of the test is projected as soon as Mr. Foss can produce the material.

Dean B. Judd and LeGrand H. Hardy, Co-Chairmen of the committee on Studies of Color Blindness, recommended that a selection of A.O. Test plates be authorized as a screening test until improved tests are produced.

Dean B. Judd reported progress on the problem of illuminating and viewing conditions for colorimetry. Dorothy Nickerson presented a report and recommendations for a study of the illuminant in textile color matching.

At the Phiiadelphia meeting of the American Psychological Association, the delegates met and agreed upon two proposals. First, it was decided to sponsor a round table discussion of color problems at the 1947 meeting of the APA. During the spring of 1947, the chairman of the delegation corresponded with all of the delegates in an attempt to carry out this recommendation. It turns out, however, that there will not be enough (only two) of the delegates present at the Detroit meeting to warrant a round table on color or even a meeting of the delegates. The proposal was automatically tabled and will be reviewed in time for the 1948 meeting in Boston.

Second, the delegation agreed that a proposal be submitted to the program committee that Ralph M. Evans, present Chairman of the Inter-Society Color Council, be asked to give a general lecture on "Color in Photography" before the APA. at its 1947 meeting in Detroit.

In addition to the 10 delegates appointed by the APA. several other members of the APA. have joined the Individual Member group of the ISCC, and are indicating their interest in the activities of that group by actively participating in its work.

Your delegation recommends (1) that the American Psychological Association continue its membership in the Inter-Society Color Council and (2) that the present delegation be reappointed.

Respectfully submitted,

S. M. Newhall, Voting delegate
M. J. Zigler, Voting delegate
F. A. Geldard
J. P. Guilford
Harry Helson
T. F. Karwoski
Elsie Murray
Louise L. Sloan
S. R. Wallace, Jr.
F. L. Dimmick, *Chairman*

REPORT OF THE REPRESENTATIVE TO THE NATIONAL COUNCIL ON REHABILITATION

To the Council of Representatives of the American Psychological Association:

The National Council on Rehabilitation has run into serious financial difficulty. At the last minute the Council cancelled its annual meeting in St. Louis and instead called a Business meeting in New York on April 29, 1947 to consider the proposition that the Council be dissolved. At the meeting, several delegates expressed the opinion that there is an enduring interest in the original purpose and scope of the Council and that the work undertaken by it would go on, even if it should be necessary to form a new organization. Consequently, the delegates directed the Executive Committee of the Council to take the following steps: (1) curtail current operating expenses so that the Council would remain solvent, (2) appoint a committee to make recommendations to the Executive Committee before September 15, 1947 as to whether the Council should be continued or dissolved, and (3) complete and publish the 800 page bibliography, "Rehabilitation of the Handicapped," that the Council has been working on for several years.

Your representative feels that the Council is serving a very real purpose. Many of its projects (defining the functions of the several professional groups in the rehabilitation process, preparing the bibliography mentioned above, etc.) will be of great help to psychologists.

It is fairly evident that the Council will, if it continues to function, be forced to ask each organization to increase its contribution to the Council. Your representative would like to suggest that the American Psychological Association express its willingness to increase its annual contribution to the Council from $25.00 to $50.00.

Respectfully submitted,

Louis Long

REPORT OF THE ADVISORY COUNCIL ON HUMAN RELATIONS IN CONSERVATION

To the Council of Representatives of the American Psychological Association:

The Advisory Council on Human Relations in Conservation has been inactive during the past year. One government agency is planning a program which will involve the Advisory Council's participation this coming year. As the Council is appointed for a three-year term, no action by the Council of Representatives at this time need be taken.

Respectfully submitted,
Horace B. English
Douglas H. Fryer

BUDGET FOR 1948

Income

Dues		$87,075
Fellows (1075 @ $17.50)	$17,812.50	
Associates (4325 @ $12.50)	54,062.50	
Student Affiliates (1200 @ $7.50)	9,000.00	
Other Affiliates (200 @ $4.00)	800.00	
Additional dues collected for Divisions (estimated at average of $1.00 per member)	5,400.00	
Club Subscriptions by members and affiliates		$28,500
Supplementary subscriptions		$38,340
American Psychologist	$1,320	
Journal of Abnormal Psychology	$4,750	
Journal of Applied Psychology	$6,620	
Journal of Comp. and Physiol. Psych.	$1,890	
Journal of Consulting Psychology	$2,460	
Journal of Experimental Psychology	$4,250	
Psychological Abstracts	$6,930	
Psychological Bulletin	$4,730	
Psychological Monographs (Gen. and App.)	$1,220	
Psychological Review	$4,170	
Sale of Back Numbers		$6,000
Advertising		$3,000
Interest on Investments		$2,300
Miscellaneous		$1,000
TOTAL INCOME		$166,215

Expenses

To Divisions		$10,800
*To American Journal of Psychology**		1,820
Printing Costs		68,900
American Psychologist	$12,400	
Journal of Abnormal Psychology	7,000	
Journal of Applied Psychology	6,200	
Journal of Comp. and Physiol. Psy.	4,900	
Journal of Consulting Psychology	4,200	
Journal of Experimental Psychology	5,600	
Psychological Abstracts	11,900	
Psychological Bulletin	7,000	
Psychological Mono. (Gen. and App.)	5,200	
Psychological Review	4,500	
Editorial Stipends		3,200
Journal of Abnormal Psychology	400	
Journal of Applied Psychology	400	
Journal of Comp. and Physiol. Psy.	400	
Journal of Consulting Psychology	400	
Journal of Experimental Psychology	400	
Psychological Bulletin	400	
Psychological Monographs, (Gen. and App.)	400	
Psychological Review	400	
Officer's Stipends		400
Recording Secretary	400	
Psychological Abstracts Office		7,000
Salaries and office help	6,500	
Supplies and postage	500	
APA office		52,600
Salaries	36,000	
Rent and utilities, etc.	3,600	
Supplies and printing	10,000	
New equipment	2,000	
Executive Secretary's travel	1,000	
Audit		500
Annual Meeting		500
Board of Directors Winter Meeting		$1,000
Committee Expenses		$3,800
Policy and Planning Board	$1,000	
Board of Editors	700	
Comm. on the Relation of Psychology to Psychiatry	500	
Committee on International Planning	600	
Program Committee	200	
Committee on Publications	300	
Comm. on Psychological Service Centers	500	
Building Fund Reserve		$5,000
1948 *Yearbook*		$12,000
Memberships		1,335
Office of Scientific Personnel	$1,250	
Inter-society Color Council	25	
American Council on Education	10	
National Council on Rehabilitation	50	
Contingency		$2,000
TOTAL EXPENSE		$170,855
Less one-half of Yearbook cost charged to 1949 and 1950 budgets		6,000
NET EXPENSE		164,855
SURPLUS		1,360

* $1.50 of each club subscription which includes the *American Journal of Psychology* is paid to that journal.

APA OFFICERS, DIVISION OFFICERS, EDITORS, COMMITTEES, AND REPRESENTATIVES, 1947-1948

APA OFFICERS

President: Donald G. Marquis (1947–48), University of Michigan

President-elect: Ernest R. Hilgard (1947–48), Stanford University

Recording Secretary: Helen Peak (1946–49), Connecticut College

Treasurer: Carroll L. Shartle (1947–52), The Ohio State University

Executive Secretary: Dael Wolfle (1946–48), American Psychological Association

Board of Directors: The President, the President-elect, the Recording Secretary, the Treasurer, and

John F. Dashiell (1945–48)
Richard M. Elliott (1945–48)
Clarence H. Graham (1946–49)
Laurance F. Shaffer (1946–49)
Theodore M. Newcomb (1947–50)
Robert R. Sears (1947–50)

THE COUNCIL OF REPRESENTATIVES

The Council of Representatives consists of the officers of the Association and four types of Representatives:

1. Regional Representatives, who serve for three-year terms.

I. New England, Carl I. Hovland (1946–49)
II. Middle Atlantic, Gardner Murphy (1947–50)
III. East North Central, Robert H. Seashore (1945–48)
IV. West North Central, Kenneth W. Spence (1946–49)
V. Southeastern, Donald K. Adams (1947–50)
VI. Southwestern, Paul C. Young (1945–48)
VII. Rocky Mountain, Karl F. Muenzinger (1946–49)
VIII. Pacific Coast, Jean Walker Macfarlane (1947–50)
IX. Dominion of Canada, George Humphrey (1945–48)

2. Division Representatives, who serve for one-year terms, but who are automatically renominated for a second and a third term, and who can not serve for more than three consecutive years. The Division Representatives are named below with the other officers of the divisions they represent.

3. Representatives of the Conference of State Psychological Associations, who serve for two-year terms.

Marion A. Bills
Orlo L. Crissey
John G. Darley
Stanley G. Estes
John G. Peatman
Gilbert J. Rich

4. Special Representatives. The Council of Representatives may at its discretion propose Special Representatives of groups not qualifying as divisions of the Association. One has been approved by the Council:

Herman G. Canady (1945–48), Representative of the Department of Psychology of the American Teachers Association.

OFFICERS OF DIVISIONS

1. Division of General Psychology
   President: Edward C. Tolman
   President-elect: Robert H. Seashore
   Secretary: Delos D. Wickens
   Representatives:
   Charles W. Bray,[1] 1945
   Anne Anastasi, 1946
   Karl M. Dallenbach, 1946
   Norman L. Munn, 1946
2. Division on the Teaching of Psychology
   President: Sidney L. Pressey
   President-elect: William A. Hunt
   Secretary: Elizabeth Duffy

[1] The year of first election of each Division Representative is given.

Representatives:
Floyd L. Ruch, 1946
Richard M. Elliott, 1947
A. R. Gilliland, 1947

3. Division of Theoretical-Experimental Psychology
President: Clarence H. Graham
President-elect: Clark L. Hull
Secretary: Kenneth W. Spence
Representatives:
Ernest R. Hilgard, 1946
Edwin R. Guthrie, 1947
Arthur W. Melton, 1947

5. Division on Evaluation and Measurement
President: J. P. Guilford
President-elect: Robert L. Thorndike
Secretary: Robert L. Thorndike
Representatives:
Henry E. Garrett, 1945
John C. Flanagan, 1947
Quinn McNemar, 1947

6. Division of Physiological and Comparative Psychology
President: Clifford T. Morgan
President-elect: Frank A. Beach
Secretary: Harry F. Harlow
Representatives:
W. J. Brogden, 1947
Karl F. Muenzinger, 1947

7. Division on Childhood and Adolescence
President: Florence L. Goodenough
President-elect: Harold E. Jones
Secretary: T. W. Richards
Representatives:
Harold E. Jones, 1946
Roger G. Barker, 1947
Beth L. Wellman, 1947

8. Division of Personality and Social Psychology
President: Gardner Murphy
President-elect: Theodore M. Newcomb
Secretary: Ross Stagner
Representatives:
Theodore M. Newcomb, 1945
J. McV. Hunt, 1946
A. H. Maslow, 1946
R. Nevitt Sanford, 1947

9. The Society for the Psychological Study of Social Issues—a Division of the APA
President: Hadley Cantril
President-elect: Ronald Lippitt
Secretary: Eugene L. Hartley
Representatives:
Goodwin Watson, 1945
David Krech, 1947
Ruth S. Tolman, 1947

10. Division on Esthetics
President: Paul R. Farnsworth
Secretary: Norman C. Meier
Representatives:
Herbert S. Langfeld, 1945
Norman C. Meier, 1947

12. Division of Clinical and Abnormal Psychology
President: David Shakow
President-elect: David Wechsler
Secretary: David Rapaport
Representatives:
S. J. Beck, 1945
David Shakow, 1945
David Wechsler, 1945
David Rapaport, 1946
William A. Hunt, 1947
C. M. Louttit, 1947

13. Division of Consulting Psychology
President: Donald E. Super
President-elect: Morris S. Viteles
Secretary: Emily T. Burr
Representatives:
Jack Dunlap, 1947
Douglas H. Fryer, 1947

14. Division of Industrial and Business Psychology
President: George K. Bennett
President-elect: Floyd L. Ruch
Secretary: Floyd L. Ruch
Representatives:
Roger M. Bellows, 1947
Jay L. Otis, 1947

15. Division of Educational Psychology
President: Percival M. Symonds
President-elect: A. I. Gates
Secretary: Gertrude Hildreth
Representatives:
Arthur T Jersild, 1945
Sidney L. Pressey, 1946
W. A. Brownell, 1947

16. Division of School Psychologists
President: Margaret E. Hall
President-elect: Ethel L. Cornell
Secretary: Milton A. Saffir
Representatives:
Fred Brown, 1945
Albert J. Harris, 1947

17. Division of Counseling and Guidance Psychologists
    President: G. Frederic Kuder
    Secretary: Mitchell Dreese
18. Division of Psychologists in Public Service
    President: Marion W. Richardson
    Secretary: Beatrice J. Dvorak
    Representatives:
      Max L. Hutt, 1946
      Marion W. Richardson, 1947
19. Division of Military Psychology
    President: John G. Jenkins
    Secretary: William A. Hunt
    Representatives:
      (Army) Paul M. Fitts, 1946
      (Navy) Steuart Henderson Britt, 1946
20. Division on Maturity and Old Age
    President: Walter R. Miles
    President-elect: Herbert S. Conrad
    Secretary: Raymond G. Kuhlen
    Representatives:
      George Lawton, 1946
      Walter R. Miles, 1946

EDITORS OF JOURNALS PUBLISHED BY THE ASSOCIATION

American Psychologist: Dael Wolfle (1946–48)
Applied Psychology Monographs: Herbert S. Conrad (term ends 1952)
Journal of Abnormal and Social Psychology: Gordon W. Allport (1945–50)
Journal of Applied Psychology: Donald G. Paterson (1943–48)
Journal of Comparative and Physiological Psychology: Calvin P. Stone (1947–52)
Journal of Consulting Psychology: Laurance F. Shaffer (1947–52)
Journal of Experimental Psychology: Francis W. Irwin (1947–52)
Psychological Abstracts: C. M. Louttit (1947–52)
Psychological Bulletin: Lyle H. Lanier (1947–52)
Psychological Monographs: John F. Dashiell (1944–49)
Psychological Review: Herbert S. Langfeld (term ends 1947), Carroll C. Pratt (1948–53)

CONFERENCE OF STATE PSYCHOLOGICAL ASSOCIATIONS

President: John G. Peatman
Secretary: Gilbert J. Rich

STANDING COMMITTEES

Committee on Committees
  Claude E. Buxton (1945–48), Chairman
  John G. Darley (1945–49)
  Robert H. Seashore (1945–50)
  J. P. Guilford (1946–51)
  Edna Heidbreder (1947–52)
Finance Committee
  Carroll L. Shartle (1947–52), Chairman
  Marion A. Bills (1947–48)
  Steuart Henderson Britt (1947–48)
  Leonard Carmichael (1947–48)
  S. W. Fernberger (1947–48)
Convention Program Committee
  George A. Kelly (1946–48), Chairman
  Irvin L. Child (1946–49)
  Donald B. Lindsley (1947–50)
  Stanley G. Estes (1947–48)
  Irving C. Whittemore (1947–48)
  Ernest R. Hilgard (1947–48), *ex officio*
Committee on Scientific and Professional Ethics
  Gordon W. Allport (1945–48), Chairman
  Horace B. English (1945–49)
  Edgar A. Doll (1945–50)
  Edwin Ghiselli (1946–51)
  Gilbert J. Rich (1947–52)
Election Committee
  Edwin R. Guthrie (1945–48)
  Henry E. Garrett (1946–49)
  Carl R. Rogers (1947–50), Chairman
Committee on Student Affiliates
  Robert C. Tryon (1945–48), Chairman
  Francis P. Robinson (1945–49)
  Beth Wellman (1945–50)
  Walter C. Shipley (1946–51)
  Robert L. Thorndike (1947–52)
  Plus student members to be added by the committee
Committee on Public Relations
  Sidney L. Pressey (1945–48), Chairman
  Daniel Katz (1946–49)
  George H. Gallup (1947–50)
Committee on Publications
  From the Council of Representatives
    William A. Hunt (1945–48)
    Frank A. Beach (1946–49), Chairman
    Wayne Dennis (1947–50)
  From the Board of Editors
    Francis W. Irwin (1946–48)

John F. Dashiell (1946–49)
Herbert S. Conrad (1947–50)

Policy and Planning Board
Marion A. Bills (1945–48)
Ernest R. Hilgard (1945–48)
Ruth S. Tolman (1945–48)
Clarence H. Graham (1946–49)
Robert R. Sears (1946–49), Chairman
David Shakow (1946–49)
Edwin R. Guthrie (1947–50)
Rensis Likert (1947–50)
Helen Peak (1947–50)

SPECIAL COMMITTEES[2]

Committee on Precautions in Animal Experimentation
Howard S. Liddell, 1945, Chairman
Robert H. Bruce, 1946
W. D. Neff, 1947

Committee on Audio-Visual Aids
Clarence R. Carpenter, 1945, Chairman
Lester F. Beck, 1945, Co-Chairman
Kenneth H. Baker, 1945
Wayne Dennis, 1945
Mark A. May, 1945
Stephen M. Corey, 1945
Elias Katz, 1947

Committee on Graduate and Professional Training
Elaine Kinder, 1945
Bruce V. Moore, 1945
Robert R. Sears, 1945
Carroll L. Shartle, 1945
John G. Darley, 1946
E. Lowell Kelly, 1946, Chairman
Jean W. Macfarlane, 1946
M. W. Richardson, 1946
Donald W. MacKinnon, 1947

Committee on Standards for Psychological Service Centers
Jerry W. Carter, Jr., 1945
Wm. Clark Trow, 1946, Chairman
Bertha M. Luckey, 1947
Vernon P. Scheidt, 1947
C. Gilbert Wrenn, 1947
Robert A. Young, 1947

[2] Special Committees are committees appointed by the Council of Representatives or Board of Directors, but not required by the By Laws. Members of these committees serve without predetermined terms; the date of first appointment is given.

Committee on the Relation of Psychology to Psychiatry
William A. Hunt, 1945
Carlyle F. Jacobsen, 1945, Chairman
Laurance F. Shaffer, 1945
Frederick C. Thorne, 1945
James G. Miller, 1946
Carl R. Rogers, 1947

Committee on International Planning in Psychology
Walter S. Hunter, 1945
Herbert S. Langfeld, 1945, Chairman
Walter R. Miles, 1945
Robert M. Yerkes, 1945
Jerome S. Bruner, 1947

Committee of University Department Chairmen
Constituted from the chairmen, or their representatives, of the 33 departments of psychology in those universities which conferred ten or more doctoral degrees in psychology during the period 1934 to 1942.
Robert A. Brotemerkle, 1947, Chairman
Clifford T. Morgan, 1947, Secretary

Committee on Clinical Training in Psychology
Ernest R. Hilgard, 1947
E. Lowell Kelly, 1947
Bertha M. Luckey, 1947
R. Nevitt Sanford, 1947
Laurance F. Shaffer, 1947
David Shakow, 1947, Chairman

Committee on Ethical Standards in Psychology
John C. Flanagan, 1947
Edwin Ghiselli, 1947
Nicholas M. Hobbs, 1947
Helen Sargent, 1947
Edward C. Tolman, 1947, Chairman
Lloyd N. Yepsen, 1947

Committee on Relations with the Social Work Profession
J. McV. Hunt, 1947, Chairman
Other members to be appointed.

AMERICAN PSYCHOLOGICAL ASSOCIATION REPRESENTATIVES TO OTHER ORGANIZATIONS[3]

American Association for the Advancement of Science
Edwin G. Boring (1947–49)
Ernest R. Hilgard (1947–49)

[3] Terms of appointment are given where appropriate. Others are appointed annually.

National Research Council
Otto Klineberg (1945–48)
Robert R. Sears (1945–48)
Kenneth W. Spence (1945–48)
Rensis Likert (1946–49)
Donald G. Marquis (1946–49)
Carl R. Rogers (1946–49)
George K. Bennett (1947–50)
Charles W. Bray (1947–50)
Richard M. Elliott (1947–50)
Carney Landis (1948–51)
Donald B. Lindsley (1948–51)
R. Nevitt Sanford (1948–51)
Social Science Research Council
Robert R. Sears (1945–47; 1948–50)
Willard C. Olson (1946–48)
Carl I. Hovland (1947–49)
American Documentation Institute
Steuart Henderson Britt
Inter-Society Color Council
Sidney M. Newhall, Voting Delegate, Chairman
M. J. Zigler, Voting Delegate
Harry Helson, Voting Delegate
Forrest L. Dimmick
Elsie Murray
Louise L. Sloan
S. Rains Wallace, Jr.
Neil R. Bartlett
H. R. Blackwell
Alphonse Chapanis
National Council on Rehabilitation
Louis Long
Advisory Council on Human Relations in Conservation
Horace B. English (1945–48)
Douglas H. Fryer (1945–48)
Inter-Society Committee for a National Science Foundation
E. Lowell Kelly
Dael Wolfle
American Standards Association, Sectional Committee on Optics
Sidney M. Newhall, Representative
Henry A. Imus, Alternate

ANNUAL REPORT OF THE EXECUTIVE SECRETARY: 1947

DAEL WOLFLE

American Psychological Association

THE central fact of psychology today is the rapidity of its growth. From time to time in the AMERICAN PSYCHOLOGIST I have published news items concerning this growth. Let me briefly review them here. A year ago we had 4500 members; we now have 5100. A year ago we had 100 student affiliates; we now have 1000. In 1946 we mailed to members and other subscribers a total of 25,000 volumes of our journals; in 1947 we are mailing 37,000, half again as many.

If we look back ten years instead of one, we find greater contrasts in size, but we also find the APA occupied with some of the same problems that face us now. In 1937, there were 2100 members and the APA operated on a budget of $15,000. A committee considering whether the *Psychological Abstracts* should be continued or not estimated that by today we would have 3100 members, 60 per cent of what we actually have. In that year the APA officially censured one of its members for attempting to conduct personal counseling by mail. A committee appointed to study the costs of operating the APA recommended setting up a central office very much like the one we have now. Instead of following that recommendation, the APA chose to keep the office of the Secretary separate from that of the Treasurer and Business Manager, and elected Willard Olson and Willard Valentine to the two positions. It was not until nine years later that a single office to handle APA affairs actually came into existence.

You may remember that a year ago in my first annual report I said that the central office was not yet physically established. A year ago we had two offices in Washington, several miles apart. In one we continued the functions which Dr. Olson as the last Secretary and Dr. Marquis as the Director of the Office of Psychological Personnel had carried on. In the other we continued the functions previously performed by Dr. Valentine as the last Business Manager of APA publications. Sometimes one office did not know what the other was doing or what information or facilities it possessed. I remember the pleasure experienced when one office discovered that the other had a really complete and definitive list of APA members.

But now the office is united under a single roof. The various sections have grown so used to calling on each other for help and information that they can not imagine how Dr. Olson and Dr. Valentine managed, divided as they were by the distance separating Ann Arbor from Evanston.

Let me repeat: the central fact of psychology is the rapidity of its growth. In my report today I wish to emphasize how I as Executive Secretary am affected by this growth; how the American Psychological Association as a corporate entity is affected; and how you as individual psychologists are affected.

One result of psychology's growth on me and on all members of the office staff is an increase in the volume of correspondence we handle, in the number of records we keep, and in the amount of business we conduct. You may not all be fully aware that the non-profit organization called the American Psychological Association, Incorporated, is also a business. The commodity we sell is subscriptions to our scientific journals. As with other details, this business is increasing. Many of the VA centers, for example, subscribe to our journals; they create a new class of customers. More subscriptions are going to other government agencies than in the past. With the war well over, our list of foreign subscribers is again growing. One of our tasks for the coming year is to attempt to increase still further our subscription lists, for they provide one of our major sources of income.

A good part of the office is concerned with these business aspects of the APA. As a business, the APA must bond me to protect itself against the

danger of a large loss. The APA has auditors, a safe, collection policies, credit ratings, accounts receivable, and accounts payable. We publish a financial statement every year, which I hope you read.

The statement for 1947 will show that for each member of the APA, we will have spent around $28.50. This average expense is greater than any single member pays to the Association in dues and subscriptions. The difference between what the members pay and what we spend comes from subscriptions to the Association's journals.

A second effect of psychology's growth on the office is the increased extent to which we serve as an information bureau. We are steadily being called on to supply information to government agencies, other professional organizations, newspapers and magazines, prospective students, industry, the military services, and indeed, almost anyone who wants information about a specific psychologist, about psychologists in general, or about anything psychological. Sometimes I can answer the requests immediately and directly. Sometimes I refer the inquiry to a member or committee of the APA that is in a position to supply the answer. Sometimes it is necessary to refer the problem to the Board of Directors for official action.

Because we are in Washington where we are handy to reach, we receive many such calls. Because we try to answer them as objectively as possible, we get repeated inquiries from the same source. That means that the Association's judgment and wishes are considered when policies are being made that affect psychologists. And for me personally it means that I spend a good many hours in formal and informal conferences and committee meetings.

One aspect of our service as an information bureau needs special mention—the personnel placement service. During the past year we have supplied information about possible candidates for four hundred jobs. Each psychologist now registered in the office has, on the average, had his credentials submitted to more than three possible employers in the last eight months.

The personnel placement service, furthermore, is a constant source of job information to employers and to employees. We are consulted about employment trends, about suitable salary levels for new positions, about almost any problem concerning the employment of psychologists.

This service is frequently a financial help to those registered with it. We get letters thanking us for assistance in securing a new job at a higher salary. We also get letters from people who did not accept a new position, but who thank us for a raise in their present one, which came about, at least partly, as a result of the rival offer. One psychologist, for example, credits us with three recent salary raises. This is nice for psychologists, but I fear that college administrators and other employers consider us an ominous threat to their budgets.

A third effect of psychology's growth on the office is the necessity of making much of the work less personal, the necessity of delegating more and more of the details to my assistants. Handling the daily mail, for example, must largely be delegated to others. It takes one clerk most of Monday and several hours each other day to open the mail, sort it according to type, and maintain the mail record. With one and sometimes with two stenographers I answer part of it, but many letters have to be answered by others. Those of you who are familiar with office organization recognize the necessity for such procedures. Those of you who are not, occasionally puzzle the mail clerk. Once in a while, for example, she brings me a letter whose author is identified by his given name or even by his nickname. Since these letters usually must come to me for identification, and since I am frequently away from the office, you might get prompter service by signing your full name.

The preparation of the 1948 *Yearbook* provides another example of this depersonalization of the office. If there were only 50 in the APA, I could remember their life histories, make up their biographies, type copies, and send each person his *Yearbook* in a day or so. With 500 members a longer time would be required, but I could still go over each person's record and supplement those that needed it. With 5000 members I have to delegate practically all of the work to others. So far 3400 of you have returned your questionnaires; 1700 have not yet done so. With a job of this magnitude, it is impossible for me to look over the names of those who have not submitted their own records and invent careers for them. *American Men of Science* is four years old. *Who's Who* is

incomplete. We cannot obtain up-to-date information from them. Nor should you expect us to. Therefore, it will really be necessary to publish just names and addresses for those who do not return the Yearbook questionnaire, or for those who ask us to copy *American Men of Science.*

Those members who have already returned the questionnaire will receive a typed copy of the entries as they are slated to appear in the *Yearbook.* Please correct it if any factual corrections are necessary and return it immediately. We will then send it to the printer, and cannot after that make any changes. A change at that stage for one person postpones the day when all of us can get our finished copies. Every printer the APA uses is already overworked. A job like printing the *Yearbook* must be fitted into an already crowded schedule. Because of printing difficulties and because I do not know how promptly you will all send in questionnaires and return the copy we submit to you, I make no promises as to publication date. The sooner you send in information about yourselves, the sooner it will be in print for all of us to use.

So far I have been describing effects of psychology's growth on our office. It is impossible completely to separate effects on the office from effects on the APA as an association, but I want now to shift the emphasis to describe how psychology's growth has affected the APA as a whole.

The APA is gaining a steadily greater respect and authority over psychological matters. Let me give you two examples. Both the United States Public Health Service and the Veterans Administration are supporting the training of clinical psychologists financially. Both have asked the APA to furnish a list of universities adequately staffed and equipped to give graduate training to the PhD level in clinical psychology. You have seen the resulting lists in reports published in the AMERICAN PSYCHOLOGIST by Robert Sears. This year, as a result of the excellent work done by Dr. Sears and his committee, and as a very tangible vote of confidence in the ability of the APA to discharge such responsibilities, the Public Health Service made a grant of $7500 to the APA to cover the cost of further studies in this area. The first thing we were asked to do under this grant was to outline an ideal graduate training program leading to the PhD in clinical psychology. A new Committee on Clinical Training in Psychology was appointed with David Shakow as chairman. That committee has already completed its task of outlining such a curriculum. Their report was approved by the Council of Representatives and will be published in the December, 1947 AMERICAN PSYCHOLOGIST. It provides the interested government agencies and the universities with a standard toward which they can work; it provides the universities with an ideal program against which they can measure their own programs.

The second task for Dr. Shakow's committee is to continue and refine the job done earlier by Dr. Sears and his committee. They will evaluate the training now given and will prepare a list of universities best qualified to offer graduate work in clinical psychology. The work which Dr. Sears had to do by correspondence and with a very small budget can now be improved upon because funds are available to cover the cost of visiting and examining on the spot the universities which are to be rated.

The work of the committees headed by Dr. Sears and Dr. Shakow is having a beneficial influence on graduate instruction. I have heard university staff members say that the evaluation given their departments by the APA committee was the most useful lever they ever had in securing departmental improvements. One department chairman said of the Sears' committee report: "It is a more accurate, a more calmly informative account of what is wrong with my department than any I have ever been able to write." These APA evaluations, coming from an impartial outside agency, must generally carry more weight with the university administration than do recommendations from within the department itself.

The rating of university departments is a tool which the APA is using to improve departments of psychology. The increased strength and prestige of the APA has given its recommendations greater authority.

For a second illustration of what the growth in psychology has meant to the standing of the APA, let me turn to the military organizations. Sitting above the Army, the Navy, and the Air Forces research programs is a top-level coordinating agency known as the Research and Development Board, of which Vannevar Bush is chairman. Some months ago the Research and Development Board decided that it needed an agency to coordinate and supervise

the military research programs in personnel management, manpower utilization, and the social sciences. A committee, called the Committee on Human Resources, was decided upon as the proper machinery for this purpose. Officials of the Board decided that the chairman of this committee should be a psychologist interested in social problems and with a solid background of research methodology. Their selection for the chairmanship was Donald Marquis. We have the satisfaction of knowing that our new APA President is serving as the chairman of the potentially most powerful committee ever organized to direct research efforts in the social science field.

The growth of psychology has also meant a number of things for you individually and personally as psychologists. It has meant that you are overworked. Your case loads are too great, your classes are too large, you sit on too many committees, and you work too long hours. Even so you cannot keep up with the demands. The Veterans Administration this fall tried to send the universities 550 trainees in clinical psychology; the universities had room for only 500. The U. S. Public Health Service has not granted many training stipends this year partly because they know there is not enough room to train the people they would like to support. There are exciting and financially rewarding government jobs going begging because there are not enough top-notch psychologists available to fill all the positions.

Certification is another effect of psychology's growth upon us as individual psychologists. The depersonalization that I mentioned earlier, the fact that we no longer know all our colleagues, makes a formal method of certification necessary. Certification is also a natural, even an inevitable, effect of our growing professionalization. Recognizing these facts, the APA in September 1946 authorized the creation of the American Board of Examiners in Professional Psychology. In one year it has become an incorporated body, has organized itself and its task under the presidency of Dean Carlyle Jacobsen, and has started on the difficult and delicate task of deciding which of our members are worthy of certification. Over 1200 APA members have already requested certification forms.

Certification by the Board of Examiners is restricted to psychologists who have the doctor's degree and at least five years of approved professional experience in a psychological specialty. This is high-level certification. We are also concerned with certification at a lower level for psychologists who have completed their academic training but who have not yet had the specialized experience that will make them eligible for certification as specialists by the Board of Examiners. The Policy and Planning Board has recommended that state governments certify at the lower level on the basis of the doctor's degree and one year of experience. Establishment of the same requirements for certification by all the states would make reciprocity provisions easy and would lessen confusion. In order to bring our own APA membership requirements into line with the recommended level for state certification, the Policy and Planning Board also recommended that after 1950 the doctor's degree be required for election as an Associate of the APA.

Two states, Connecticut and Virginia, already have state certification laws. Other states are now contemplating such laws and may enact them within the next year. Nevertheless, the Council of Representatives believed that the Policy and Planning Board recommendations were too important to act on hurriedly and so deferred decisions on them until the 1948 meeting. That gives the members a year in which to consider these two recommendations. The decisions to be made in September 1948 are important, for they involve a formal definition of who is a psychologist. If the recommendations are adopted, it will mean that we have defined a psychologist as one who holds the doctor's degree.

We will then have to decide upon appropriate occupational classifications, titles, and relations with the APA of persons who do not hold the doctor's degree but who are trained to do various types of psychological work.

Each member should consider these questions, for we must decide upon the minimum level of training of the person who is to call himself a psychologist. Our relations with other professional groups and our sheer growth in size demand it.

In planning any business it is necessary to forecast future trends. In our planning for the APA office, and indeed in our planning for the future of psychology generally, it is important for us to predict as accurately as we can what our market will be for some years ahead.

One way of forecasting the future is to extrapolate

present trends. I recently plotted the growth curve of the APA from 1892 to 1947. Plotting logarithms of the numbers of members each year gives two straight lines. From the 1890's to 1920 the data are well fitted by one line. The annual increase in membership was about six per cent. From 1920 to 1947 the points are well fitted by another straight line which has a steeper slope than the earlier one. This increase in rate of growth started shortly after World War I. The annual increase in membership during this time was about ten per cent. Simply extending the 1920 to 1947 trend, without assuming any post-war increase in rate this time, leads to the following predictions: in 1950 we will have 6,500 members; in 1960 we will have 16,000 members; and in 1970 we will have 40,000 members.

Our actual growth may prove to be more or less rapid than these predictions. That there is much room for us to grow is demonstrated by many facts. Here are some of them. In the field of clinical psychology, the VA needs are so great that they are willing to pay for the training of 300 PhD's a year for the next ten years. The U. S. Public Health Service program, dealing with the other 6/7ths of the population, has just started, and is headed for great expansion over the coming years; their program of financial aid to the states will eventually provide positions for a minimum of 1300 clinical psychologists. The Army has commissions waiting for 90 young men. At present there is a ratio of one clinical psychologist to over 3,000 patients in state mental hospitals; a ratio of 1 to 350 is considered desirable; we will need ten times as many clinical psychologists in these institutions as we have now before our state hospitals are properly staffed. The opportunities in clinical psychology are obviously very great; the need is just beginning to be filled.

In industrial psychology, data collected by Stagner indicate that industry needs substantially more psychologists than it now employs. In college teaching, data which I have collected justify a guess that the colleges and universities will want from a third to a half more psychology instructors in the next three or four years than they had last year.

We are, in short, compelled to grow. In our graduate schools are many students. Psychology has become one of the most popular of all undergraduate majors; we are assured of a future supply of graduate students. In practically every field of psychology there are unfilled positions for these recruits to move into. Growth of the profession for some years to come is simply inescapable.

The growth which I have described has changed the whole character of the APA. We are no longer just a small group of scientists and theorists interested in the abstractions of human and animal behavior. Whether we like it or not, we are a large professional organization. There can be no return to the good old days when everyone knew everyone else. Our growth and the change in character of the APA have enlarged our responsibilities. We continue to be responsible for increasing the breadth and scientific rigor of our knowledge of human behavior. We are also responsible for increasing the socially useful applications of that knowledge. And finally, we have the responsibility of seeing that scientific research and practical applications support and contribute to each other. These responsibilities fall upon us as individuals and as an Association.

A SIMPLE, INEXPENSIVE CLASSROOM DEMONSTRATION OF CONCEPT FORMATION

CHARLES N. COFER AND GEORGE HORSLEY SMITH

University of Maryland *Princeton University*

SIMPLE group methods for the demonstration of concept formation and insight to students in general psychology and elementary laboratory classes are apparently not numerous (*1*). Some years ago, the writers developed such a demonstration procedure, which is here reported with some sample data. We have surveyed a number of manuals of demonstrations and experiments for general and experimental psychology. In none was found as simple and as apparently effective a means for demonstrating concept formation as the one described here.

The procedure requires the single presentation of each of nine lists of nonsense syllables. The syllables in each list are different, and the only constant factor is that the third and seventh syllables of each list begin with the letter "z." After each list presentation, the two "z" syllables (different syllables in each list) are presented again, and the subject is asked *to give the syllable that followed each of the "z" syllables*. The only apparent way which will allow the S to answer correctly is for him to adopt one of two concepts: (1) that the key, or stimulus, syllables begin with "z"; or, (2) that the key syllables are the third and seventh in each list. The syllables we have used are presented in Table 1 and were selected because of their low associative power (*2*).

TABLE 1

The Nine Lists of Nonsense Syllables used to Demonstrate Concept Formation

	SERIAL POSITION									
	1	2	3	4	5	6	7	8	9	10
List 1	yib	jof	zet	mub	tah	keb	zop	dij	faw	rix
List 2	kes	wom	zud	pib	taj	nem	zal	fov	lij	yut
List 3	dev	bap	zik	tuj	nof	vaw	zer	mip	kun	laj
List 4	fup	teb	zom	haj	yik	pof	zuk	wib	jod	nax
List 5	mev	tij	zah	bup	rof	dax	zid	kef	pim	foj
List 6	hib	yev	zof	wux	nad	leb	zan	jid	vum	bep
List 7	roj	buv	zed	yuf	nij	vab	zil	huj	fep	wob
List 8	hij	pob	zak	dej	naf	vam	zib	ruv	woj	mef
List 9	jat	pov	zut	mib	kex	wub	zoj	vep	duj	lar

Almost any exposure device could be used for this demonstration, which is suitable for single subjects or for groups of subjects. We have used an inexpensive arrangement as follows. An aperture, 3 inches x 5 inches, was cut in a piece of brown cardboard, 19 inches x 24 inches, which was fixed in an upright position. Each syllable was stenciled on a white card, and the card is placed by E in the aperture for 5 sec. A metronome is used for timing. A projector, memory drum, or other exposure device, if available, would serve as well.

For group administration, each S is supplied with strips of paper, numbered 1 through 10, on which to record his responses.

The method of administration of this procedure and the instructions to the Ss are as follows. The Ss are seated before the exposure device. After each is given the 10 strips of paper, E says: "I shall read to you several lists of nonsense syllables. As I

pronounce each syllable, I shall also show it to you through the opening (indicating it). For example, KIJ, HUV, MOF. (These are shown and pronounced.) These are only samples and will not appear again. The strips of paper we have given you are to be used later. The metronome (which is then started) is for my own timing and you may ignore it. Are there any questions? You are to look and listen. Do not ask any further questions. All right, please look and listen." After a list is exposed, E says, "Please take the top strip of paper, labeled Number 1, and write on it the answers to these questions. Write something every time." E then re-exposes, in order, the "z" syllables, each time asking, "What syllable came next after (e.g.) zet, zop?" Ten seconds are allowed for each response. E then says, "Place strip of paper Number 1 on the bottom of the pile and look and listen again."

In this way each of the nine lists of syllables is presented and tests are made on each. Following presentation of List IX, the first and ninth syllables from that list are also re-exposed, and S is requested to write on the tenth strip of paper what came next after these syllables. This serves to indicate whether the Ss actually form and limit themselves to one of the concepts mentioned above.

Following these procedures, each S is asked to introspect, answering such questions as, "What did you try to do?", "What did you tell yourself to do during the experiment?"

Data are available for 54 psychology students who have participated (in small groups) in this demonstration. Nineteen solved the problem by adopting the "z" or position cues, and the other 35 did not solve it. The introspections show a wide variety of methods and hypotheses used in attempts to solve the problem, and discussion of these procedures gives the student a good introduction to the field of concept formation. Classification of the introspective reports given by the 19 successful Ss reveals that 15 "tried to memorize all of the syllables", 12 were "confused" at one time or another, 13 "noticed" or "hit upon" the appropriate cue, 7 "paid no attention to other syllables" after the correct cue had been discovered, etc. A typical introspective account, given by a successful S, follows: "At first I didn't know what was happening. I tried to retain all of the syllables in my mind, but after the sixth one I became confused. But after a while, on the fourth piece of paper (after completing it), it struck me that you held up a "z" every time, or a syllable starting with that letter. I realized *that* was my key letter, and from then on I paid no attention whatsoever to any but the "z's" and what followed them. . . ."

It is interesting for the class to compare the introspections of the unsuccessful Ss with those of the Ss who succeeded and to discuss the reasons that some succeed and others fail. Such discussion can center around such factors as past experience, temporary "set," and the relative rigidity of and perseveration in the thinking of some Ss and the fluid thought and abundance of alternative hypotheses shown by others.

REFERENCES

1. ANDREWS, T. G. Demonstrations for the introductory psychology course. *Amer. Psychologist*, 1946, **1**, 312–323.
2. HULL, C. L. The meaningfulness of 320 selected nonsense syllables. *Amer. J. Psychol.*, 1933, **45**, 730–734.

Comment

THE FLESCH AND THE SPIRIT

The insinuating quality of the argument presented (July issue of THIS JOURNAL) by Stevens and Stone under a Flesch count of only 3.2—and hence within the reading comprehension of nearly every living psychologist—demands that even a mildly dissenting opinion should be indulged. One may well view with alarm the possible effect of such a honey of an idea upon the present hive of psychological neophytes. Without regard, then, for sentence length, affix, or personal reference, a few doubts that the reading of "Psychological Writing, Easy and Hard" have brought to mind will be set down.

Before I lead with the right, however, let me fend with the left. I have well in mind our analysts' disavowal of using the Flesch count like a magic wand. Nevertheless, in comparing individual cases as they do, the disenchanted wand becomes at least a meter stick. I have tried to respect this distinction so as not to encounter a straw man. Let me also acknowledge at once that this squib would probably have remained unwritten had Stevens and Stone not included in their survey two of my favorite psychological authors—Boring and James.

The first comment accordingly concerns the style of Boring. Our analysts discuss his writing habits not only in terms of Flesch count but almost clinically and developmentally. We are led by them to believe that until he had encountered the standards of Science Service, this author wrote a rather shabby and incomprehensible prose. The fact is, however, that in the opinion of at least one reader, Boring's presentation of the complex history of experimental psychology falls very little short of the readability which *Psychology for the Fighting Man* attained. Since this conclusion was distinctly impressionistic and depended upon a comparison of a much earlier reading of the *History* with the more recent perusal of the *Fighting Man*, I attmpted in a small way to check. Opening Boring's *History* at random—in the fashion of Biblical prophecy as it used to be practiced—I found myself at a paragraph beginning in the middle of page 348. Here was a convenient sample of 100 words—similar to the samples employed by our analysts. Following their explicit instructions, I attempted a Flesch count for the passage. To my entire satisfaction—and even amazement—it turned out that, if my figuring was right, the count here was 2.65 (adapted to the reading comprehension of a sixth-grade child). While this result is dubiously representative of the entire volume, the specimen seems at least to indicate that Boring was capable of a rather comprehensible prose long before his alleged "training."

As further evidence, regard this extract from a letter which Boring wrote me in 1942 and in which he discusses a bit of his autobiography in relation to the writing art. "It was very pleasant indeed to have you so appreciative of my various efforts to make things clear and interesting in the English medium. It is probably a case of compensation. When I went into psychology under Titchener from engineering I was branded as the uncultured engineer, and, indeed, I had very little facility with any of the cultural arts more esthetic than physics. There was no conscious setting of myself to try to learn to write, but I find I have always been very much interested in expression, always ready to take criticism and the pains to rewrite, always fascinated when I had found someone who would take me off a plateau into a new medium, as so many people have done. An illiterate man learns to do mathematical tricks in the same way, I suppose. Just now I am busy learning Science Service style for the purposes of this *Psychology for the Fighting Soldier* which is being written under the principal final editorship of Marjorie Van de Water and myself. That's fun too."

Let us turn now to James and consider especially the paradox that our analysts have disclosed: James turns out to be less readable (count of 6.04) than Koffka (5.37)! This mystifying result, which runs completely counter to the predictions of the shrewdest Harvard graduate students, gives our analysts much concern. They "boost" Koffka's count by imputing to him an unfair use of the psychological pronoun; they bring down James's by a warm commendation of certain of his Flesch-less qualities. There is, however, one objective ground, contained

in their own data, that they fail to exploit—the sigmas that they tabulate with the comment, "What these standard deviations reveal, aside from the author's variability, we do not know."

What, then, are the standard deviations of James and Koffka? James varies from a count of 5.67 in Volume I of the *Principles* to a count of 6.47 in Volume II—more than Koffka with a count of 5.37 (S. D. 0.54) varies from James in Volume I! The standard deviation for the samples from James comes to 1.59 and is noted by our analysts as being the highest for any of their authors. This figure is, indeed, so high that it probably invalidates the reported indices on statistical grounds alone. But let us look further. Our analysts discerningly observe that James's variability is due largely to differences in sentence length, one sample averaging 14 words, another 56. There are, no doubt, other examples of trot, canter, and gallop in the racy Jamesian style. But, now, do not these facts afford a clue to the unstandardizable qualities of superior psychological writing? When an author is unfailingly high in Flesch count, he *may* be open to question. But may a similar charge not be brought when the Flesch count is invariably low? Where the author veers from 4 to 7—as James does—may there not lie in his work variables of a quality that escape the formula? If the implication is sound, it would follow that the attempt to distinguish between the styles of Koffka and James by such an unmysterious scale will invariably create mysteries. Surely some room must be left for clothing the Flesch according to the spirit.

Lest the burden of this reply be misunderstood, let there be a final explicit word regarding its intention. Simplicity in writing is much to be desired—yes. Long sentences which add only words, affixes which merely signify the professional fixation of their user, and an abstract style which could well be brought to life with personal references—all these are qualities to be deplored. But let us still have long sentences where the thoughts are long, affixes if they save sentences, and even an abstraction or two without benefit of personal reference, especially if the subject-matter of them be the *person*! (And is it not likely that in this last hope will lie the salvation of our future psychological writers? Dealing as they will inevitably be doing with the whole human being about whom the report of concrete, vivid, and personal events will be made, there will exist for them little danger of a style approaching the highest Flesch counts.) For the disadvantages that such justifiable violations of the formula may involve there are at hand many other compensating principles of rhetoric. These additional principles are, moreover, quite as essential for good writing as the three that Flesch found it convenient to include in his sirenic recipe.

Hollywood must leave Psychology something! Some of our scripts, at least, will be read by individuals with more than eighth grade education (Flesch count 4). In turn, psychology can leave to Flesch the solution of such legitimate problems as the readability of reading-books produced by the thousands for the millions. For distinguishing among the styles of individual psychologists, we may perhaps be permitted a less quantitative and more precise approach.

SAUL ROSENZWEIG
Western State Psychiatric Institute and Clinic, Pittsburgh

FURTHER COMMENT

There are two common objections to measurement, and Rosenzweig raises both of them. They are both valid objections, and he who would measure must give them heed. Objection I is that measurement, depending as it does upon analysis, produces distortion. The essence of a complex phenomenon evaporates under the process of dissection; configurations get themselves disfigured; the image of the whole is blurred when the parts are brought into focus. All this is to say that there is more to English prose than sentence length, affixes, and personal references. On this point all parties seem agreed, including Flesch. And there remains only the pragmatic question of the usefulness, despite its potentialities for distortion, of trying to isolate a variable (readability) and of trying to measure it by a set of weighted factors. The distortions may prove too great for some purposes, insignificant for others. The test is in the trying.

Objection II directs itself against the fitness of a

given procedure. How well does it scale what it sets out to measure? In concrete issue, why does James score less readable than Koffka when some people think he is easier? This turns out to be a happy question—happy because of its catalytic action upon a pair of psychologists. Both Rosenzweig and Flesch suggest answers.

Rosenzweig makes the very plausible proposal that some of the Jamesian merit hinges upon the variability of his Flesch count. Certainly variability, artistically distributed, has long been recognized as an advantage to style, but precisely how this factor should be quantified and weighted is a matter for serious statistical research. Here is a good job for somebody.

Flesch proposes a different hypothesis. In a personal communication he suggests that if the Koffka-James puzzle is real—not due to sampling error—it may be resolved by measuring a fourth determinant of readability: "the degree to which the author has approached a conversational tone." Flesch took the work sheets on which we had typed the sample passages from the two authors and subjected them to some computations of his own. Then in a second letter, under date of August 21, he wrote as follows:

> I analyzed the material to find the statistical frequency of a factor I have recently been experimenting with: Percentage of "non-declarative" sentences, such as, questions, exclamations, commands, requests, incomplete sentences, and all sentences directly addressed to another person. The results were:
>
> | | |
> |---|---|
> | Koffka | 4.4% |
> | James, vol. 1 | 15.7% |
> | James, vol. 2 | 10.4% |
>
> In other words, there is a clearly significant difference between the readability of the two writers in this respect; there is even a significant difference between the first volume of James' *Principles* and the more difficult second volume.

To illustrate this difference I quote a few of James' sentences that show the conversational quality of the sentence types I counted:

> I, p. 400: "To sum up now this long chapter." (Incomplete)
>
> I, p. 550: "After discrimination, association!" (Exclamation)
>
> I, p. 364: "Or does one seriously think he understands better how the knower 'connects' its objects, when one calls the former a transcendental Ego and the latter a 'Manifold of Intuition' than when one calls them Thought and Things respectively?" (Question)
>
> II, p. 541: "Ask half the common drunkards you know why it is that they fall so often a prey to temptation, and they will say that most of the time they cannot tell." (Imperative mood)

I have not quite worked out how to embody this new factor in my formula. At any rate, the "Koffka-James problem" provided an excellent and highly satisfactory test of my hypothesis.

Obviously the last word on readability has not been said. Readability is an affair of many dimensions, only a few of which have been explored. The explorers are moved by a simple faith, namely, that for practical purposes the factors are finite.

Now to change the subject for the last time. We share with Rosenzweig his enthusiasm for his "favorite psychological authors—Boring and James." Through no fault of their own, they find themselves caught in the middle of this verbal scuffle. Middle, perhaps, is not the right word, for we seem all to be tugging on the same end of the rope. Unless somebody soon lets go, the field will be set for a delightful contest to see who can say the nicest things about Boring and James.

S. S. STEVENS
GERALDINE STONE
Harvard University

PROFESSOR TAYLOR AND THE PROBLEM OF NOTEHAND

Two decades ago there would have been temerity in even seconding Professor Taylor's suggestions (*4*). Some of our colleagues have been sensitized to emphases on mere formal efficiencies, and put them aside as compensations for inadequacies at higher intellectual levels. No such reproach is to be put upon an editorial style which has for years abbreviated *Orthopsychiatry* as *Orthopsychiat.* The

basic problem is to construct the most economical cues. Practical requirements concern three sorts of economy: of recording space, of recording time, of recall. Ordinary shorthand emphasizes economy of recording time; notebook space is at a discount, and the growing "coldness" of notes signifies the rapid diminution of recall. Notes of the Stenotype variety do not get cold in this way, but technical considerations all but exclude them from the normal purposes of notehand.

The functional difference between shorthand and notehand is essentially that shorthand bases itself on verbatim recording, while notehand is properly *not* for recording a grammatical text, but for recalling ideas. The prime requirement of notehand is this readiness of recall, even after long delays and under distracting circumstances. The aim is to achieve the greatest economy of recording space and time that is consistent with this recall.

This basic need for economy of recall is best served by typescript, and the reason for this discussion is that Professor Taylor's suggestions are only partly adapted thereto. Convenient foundations for such a system (or systems, notehand being very much an individual affair) exist in (*a*) the Phillips Code (*3*), a system designed for telegraphic transmission of news despatches, and (*b*) the established shorthand system known as Speedwriting[1] (*1*). This writer happens to have been more influenced by Phillips Code, but Speedwriting offers perhaps a fuller illustration of the problems and principles, keeping always in mind such modifications as are called for by notehand's different function.

Since grammatical text is not involved, the problem of notehand reduces to one of brief, Latin-alphabet symbols for such key expressions as the individual user requires. Phillips Code, while designed for a much wider sphere than a professional specialty, has considerable usefulness as a guide to method in cueing the vocabulary of the specialist. Phillips Code symbols appear to average briefer than, if not always so distinctive as, those cited by Professor Taylor (*4*, p. 107); some equivalents being; *abbreviation = abn; adjust = aj; advantage = adg; approximate = apx; associate = ast.* Speedwriting equivalents are respectively, *abvj; aj,; avj; apxma; sZa.* (Borrowings from Phillips Code cited below are followed by an asterisk, e.g. *satisfactory = sfy**.)

Distinctiveness is a fundamental requisite of such symbols. A symbol must not be overapt to suggest a meaning different from that intended, as flagrantly, *APA = American Psychological Association, American Psychiatric Association;* (no longer that older group whose ideology brought the invocation "Here's to the Harp of Tara; may she never lack a string as long as there's a piece of gut left in an APA"). Further instances are *Eng. = English, Engineering; Gen. = General, Genetic.* Among other homonyms developing in different contexts, *GP* has done duty for *General Paralysis, General Peritonitis, General Practitioner, Grateful Patient, Grand Passion; GI* for *Government Issue, General Issue, Galvanized Iron, Gastro-Intestinal; DP* for *Dementia Praecox* long before *Displaced Person.*

Many words important to our discipline do not readily yield brief and sufficiently distinctive combinations of letters; e.g. beside *psychology* and *psychiatry* above, *physiology, pathology, personnel, psychoanalysis, philosophy.* This writer has come to the general usage, respectively, of *psol, psat, phol, ptol, psel, psan, ffy** (*psychopathology = psp*). Speedwriting equivalents are respectively, *skol; sktr,; fsol; ptol; psnl; skalss; flsf,; skptol.* The Phillips Code term *ffy* illustrates the effective practise of using more or less arbitrary letters to confer distinctiveness. This is particularly convenient with words that afford of themselves no readily distinctive condensation; e.g. *frx* = furious; dq* = discover.* Relatively infrequent letters, as *k, j, q, x, z,* lend themselves especially to this purpose, e.g. *kj* = complain; rlj* = religion; sq* = separate; rdx* = ridiculous; pzr* = poisoner.* (In this writer's usage, institution, substitution = ixn, sxn, etc). The now common habit of initial letters for phrases is forecast; e.g. *Scotus* = Supreme Court of the United States.*

Phillips Code is limited by technical considerations in another effective device for achieving distinction, which is available to Speedwriting, and for the conditions of notehand. This is the use of capital letters in any location, initially, medially or finally (cf. *pH*). Initially, one function may be to distinguish two syllable prefixes, e.g. *p = per, P = para, peri; c = con, com, C = contra, counter, circum (CC = circumstance); s = sub, S = super, supra*

[1] Acknowledgment is due to Mrs. Edina C. Dover, of the Hickox Secretarial School, Boston, for assistance with the subsequent allusions to Speedwriting.

(*Ivt-Xvt* = *Introvert-Extravert*). Capitalization is also useful as an anlogue of the "doubling" device of Pitmanic shorthand, thus *Ml* = *material; O* = *other; iSm* = *instrument; fC* = *factor.* Or for an arbitrary distinctiveness, e.g. *abstract* = *aS; concrete* = *cC.*

Medial and final capitalizations are advantageous in avoiding homonymy; such expressions do not occur in normal writing, thus have had no chance to develop associations other than those the user assigns to them. A doubled letter sometimes affords a good means to distinctiveness; e.g. *memory* = *mmy*; condition* = *cnn; test* = *tt.* Numerals, and diacritical or punctuation marks generally, are to be avoided in this function. They are facile enough with the typewriter, save where the shift-key is needed, but a liability in handwritten notes, where cursiveness is important to writing speed.

It is well to make single letters, both lower and upper case, do as much service of this sort as practicable. Among those finding their way into this writer's usage are, *that* = *a; better* = *B; the* = *e* (*these* = *ee*); *either* = *E; against* = *g; this* = *i; less* = *l; more, him, them* = *m* (*himself* = *ms, themselves* = *mss*); *nature* = *N; those* = *o* (*Orthopsychiatry* = *Opsat*); *than* = *q* (phrased as *Bq, lq, mq*); *such* = *S; thing* = *t; time* = *T; value* = *V; they* = *z.*

In most psychological contexts, the publications listed on the inside front cover of this periodical can be cited by initials, with occasional sacrifices of brevity to distinctiveness or readiness of recall; e.g. *JASP*, but *JexP, JapP, ApPMg, JcoP, AmP.* Cf. also, *American Journal of Psychology* = *AJPsol; American Journal of Psychiatry* = *AJPsat; Journal of General Psychology* = *JgnlP; Journal of Genetic Psychol* = *JgecP*; *Journal of Educational Psychology* = *JedlP*, etc.

One can, when convenient, derive various notehand symbols from conventional shorthand, by replacing the shorthand signs with their alphabetical equivalents. Some Gregg (*2*) derivatives of this sort would be: *approximate* = *aprx; business* = *bs* (*bz**); *complaint* = *kp; difference* = *df* (*dfc**), *education* = *edu; individual* = *ndv* (*ivl**); *responsible* = *rsp* (*rpb**); *satisfactory* = *sat.*

REFERENCES

1. DEARBORN, E. B. *Speedwriting; The natural shorthand.* New York, School of Speedwriting, Inc., 1937.
2. GREGG, J. R. *Gregg shorthand.* New York, Gregg Publishing Co., 1929.
3. PHILLIPS, W. P. *The Phillips code.* New Yo k, Telegraph and Telephone Age, 1925.
4. TAYLOR, W. S. Notehand for psychologists. *Amer. Psychologist*, 1947, **2**, 106–108.

F. L. WELLS
Harvard University

MUST WE FRIGHTEN OUR STUDENTS?

A REPLY TO LANDSMAN AND DE MARTINO

Without denying even momentarily the value of caution and humility in the approach of the clinical psychologist to his patients and their problems, I should like to suggest that the intemperate treatment by Landsman and De Martino (THIS JOURNAL, 1947, **2**, 145–47) of the dangers involved in using the techniques of therapy is a disservice to students of psychology and those engaged in their instruction.

There are three principal aspects of the article by these authors with which I should like to deal in turn:

1) The assertion that because a student is majoring in psychology his classmate "anticipates expert and proven treatment" from him and that, therefore, he should refuse, if possible, to listen to his friends' problems and refer them immediately to a clinic.

In institutions with which I am familiar it is not the case that by virtue of taking courses in psychology a student automatically acquires great prestige as a therapist, whose advice will be faithfully followed. While among non-college populations there is still a distressing prevalence of the view that psychologists are mind-readers, such naive acceptance of the profession is not characteristic of college students or even of modern high school graduates. It is very doubtful if a friend asking advice because "you're a psychology major" is any more dependent upon it or will follow it any more rigorously than I if I ask an economics major what stocks to buy or a medical student what my symptoms mean.

2) The notion that the student of psychology "who will spend up to seven years in preparation" is really an adolescent enthusiast who, unless he is thoroughly frightened by the possible tragic consequences of his actions, will amuse himself by hypnotizing his friends indiscriminately, labeling them with

diagnostic terms (and thereby making them "feel more ridiculous and neurotic") and dispensing freely (and apparently always poorly) vocational guidance and psychotherapy.

Especially in these days of overtaxed facilities, departments of psychology are exercising care in the selection of major and graduate students. Few students who attain this status are so unsophisticated as to commit the errors which Landsman and De Martino mention. In my experience there is nothing to substantiate the fear that psychology majors practice frequent hypnosis, a technique of which the authors seem to stand in awe because "delusions, hallucinations, amnesia, analgesia, and certain forms of paralysis" can be induced under it, and because repeated hypnosis tends to decrease resistance in some subjects. (They fail to point out the likelihood that a "good" subject may be "ruined" for further hypnosis by bungling of the session.) While I am unfamiliar with the experimental evidence for such statements as "Simply to tell an individual that he has inferiority feelings results in driving him deeper into his feelings of inferiority," it seems likely that most clinical students are capable of exercising ordinary tact if not a little insight. Those who do not are unlikely to have friends anyway and the grave dangers of injuring them psychologically will not exist. Thirdly, the factor which usually counter-indicates establishment of a successful therapeutic relationship on a nonprofessional level is the presence of close social and emotional ties between the persons concerned, a factor which the authors do not mention. However, insofar as catharsis is concerned, it seems clear that the opportunity "to pour out griefs and pent up feelings" to a sympathetic friend is therapeutic regardless of whether the friend offers any advice or poor advice; if the relationship itself is healthy, a therapeutic result is achieved. It is difficult to see why the friend's being a psychology student would alter this fact.

3) The implication that counseling and psychotherapy are very technical and specific fields of knowledge with which the student must avoid all experimentation until, after his years of arduous preparation, the secrets are at last conveyed to him.

No other attitude could be better calculated to produce discouragement and frustration in the graduate student. He will discover sadly toward the close of his training that we know experimentally virtually nothing about therapy: we know only a little about countless therapies and techniques which have in common the single fact that they all produce results—sometimes. The student will shudder at the techniques of moral appeal employed so successfully by Dubois in 1900, or the verbal shock therapy used today by V. E. Fisher. He will read of the use of reassurance, information, causal interpretations, negative adaptation, counter-suggestion, personal appeal, prestige advice, psychoanalytic techniques, the method of tasks, relationship therapy, and so on—and he will be forced finally to adopt an eclectic approach, based on trial and error, clinical hunches and experience; or to embrace a particular technique and decline to treat the patients and disorders with which his system does not work. To imply that we will teach a student how to do therapy is dishonest and can only result in increasing the sense of inadequacy, ineptitude, and frustration that we all feel in the face of enigmatic patients and baffling disorders.

Finally, it is difficult to see why a student of clinical psychology should refrain from careful and systematic efforts to help friends who come to him with their minor maladjustments simply because he may not always be successful. With years of study and experience he will still have all-too-many failures and he will still experiment with new techniques on his patients. The student who serves officially or unofficially as a counselor to his friends and classmates, who amuses himself by observing those he meets and attempting to understand their dynamics or to diagnose their difficulties, who tries out judiciously the techniques and theories he learns in the classroom—such a student is likely to be a much more successful psychologist when his training is completed and the price of failure is greater than is the student who fearfully follows Landsman's and De Martino's list of prohibilitions: "don't label individuals with psychological terms, don't diagnose, don't give advice, don't attempt hypnosis, don't generalize freely, don't attempt treatment of individuals." Nothing is gained by denying the serious professional student a little practical experience in dealing with people and their problems or by magnifying the apprehension and uncertainty he inevitably feels in the face of our limited knowledge of human personality.

JOHN D. BLACK
University of Minnesota

Across the Secretary's Desk

WARNING: CHANGE OF APA PROCEDURES FOR DUES AND SUBSCRIPTIONS

This year your dues bill will be more complicated than ever before. This year you will be billed for extra dues if you belong to more than one division of the APA. This year members who pay their dues late will no longer automatically receive all the journals which have appeared between the time their dues' payment lapses and when they decide to pay up. This year dues and club-subscription prices have had to be increased. These sentences describe the gist of several decisions made at Detroit by the Board of Directors and Council of Representatives. The details follow.

The deadline for receiving 1948 dues will be December 31, 1947. Members whose dues are received on or before that date will receive January journals and all subsequent journals on time. Members whose dues are late will have to pay extra if they want to keep their files complete.

New Procedures for Mailing Journals.

We will follow these procedures in mailing journals to members.

1. January copies of the AMERICAN PSYCHOLOGIST, *Psychological Abstracts*, and *Psycholgoical Bulletin* will be mailed to all members whose *1947* dues are paid, whether their 1948 dues are paid on time or not.

2. On January 2 we will start separating the APA address stencils into two groups: those whose dues for 1948 have been received and those whose 1948 dues have not been received. The first group of address stencils will be used for mailing February journals. The second group will be set aside. This procedure will mean that everyone will receive January journals, but only those whose dues were received before the end of 1947 will continue to receive journals. Late payers will not receive the journals (except for January) for the period from the beginning of the year until the month after their dues are received.

This is a change in procedure. In the past, when a member paid his dues late, he received all the journals which would have come to him had he paid on time. Sending him those journals later by special ordering cost the APA money. That cost was spread over all the members who had paid on time. The Board of Directors decided that was unfair to the majority who do pay on time. Therefore, they adopted the new procedure.

If a member pays his dues late and wants the journals which he has missed, he can still get them by paying the extra costs himself. The extra cost comes from the fact that his lateness in paying requires the APA office to write to three printers, pay them for making special shipments of the *Abstracts*, *Bulletin*, and AMERICAN PSYCHOLOGIST, and pay the extra postage for the special mailing. It has always cost the APA money to make these special mailings. This year it will cost you money if you pay your dues late and still want to keep your journal files intact. To avoid that inconvenience and charge, pay your dues before the end of December.

1948 Dues Bills.

Ever since the revised APA constitution was adopted in 1945, members have been supposed to pay an extra dollar for each division, over one, to which they belonged. The fact that the divisions had not had time to make up their own membership lists made it impossible to assess these dues for 1946 and 1947. But now the divisions have had time to complete their own membership rolls; for 1948 the additional dues will be assessed.

1948 dues bills will be divided into four parts: basic APA dues, division dues, club subscriptions, and special dues for members of the Division of Clinical and Abnormal Psychology.

1. Basic APA dues: $12.50 a year for Associates and $17.50 a year for Fellows.

2. Division dues: One dollar of each member's dues is allotted to the first division he joins. For each other division he joins, he must pay an extra dollar in dues. Your total division dues to be added to your basic APA dues equals $N - 1$ times the number of divisions you belong to.

If you decide that you do not want to belong to a division which has elected you to membership, you will not have to pay dues for that division. Payment of dues for a division will confirm your election to it; nonpayment for that division will mean that you do not accept membership. Thus the dues

collections will make possible the establishment of an accurate membership roll for each division.

3. Club subscriptions: As before, all members will have the opportunity to subscribe to any one of three groups of journals in addition to the three they receive as part of membership privileges. These three are:

Club A (All other APA journals and the *American Journal of Psychology*): $20 a year for eight journals.

Club B (Experimental and general psychology): $12 a year for five journals.

Club C (Applied and general psychology): $11 a year for five journals.

4. Special dues for members of the Division of Clinical and Abnormal Psychology: This division has asked the APA to collect a special assessment of $3 from each Fellow and $2 from each Associate.

With the charges listed above you can compute your own bill for 1948 dues. Here are a few typical ones:

1. An Associate member of Divisions 1 and 6 who does not subscribe to any of the club groups will pay $13.50: $12.50 as an Associate and $1 for belonging to one extra division.

2. An Associate who belongs to Divisions 12, 17, and 19 and who subscribes to Club C will pay $27.50: $12.50 as an Associate, $2 for belonging to two extra divisions, $2 for the special assessment on Associates of Division 12, and $11 for the journals in Club C.

3. A Fellow in Divisions 12 and 13 who subscribes to all journals will pay $41.50: $17.50 as a Fellow, $1 for belonging to one extra division, $3 for special dues for Division 12, and $20 for Club A.

Increasing prices is not a pleasant business. Certainly many members are going to feel unhappy about their 1948 dues bills. The Council of Representatives knows that, but the increased cost of practically everything the APA does or buys or prints left no alternative. The Council reasoned that members would prefer to have dues increased than to stop receiving the *Abstracts*, or stop the personnel placement service, or stop the other things that the Association does for its members and for psychology.

Parenthetically, the increases are not as large as they appear. Both APA dues and subscriptions to APA journals are legitimate professional expenses for psychologists and both may be claimed as deductions in filing federal income tax returns. The total increased cost to you, with taxes as they are, will not be as great as it seems.

Dues for Affiliates.

Student Affiliates dues will be $7.50 a year for 1948 instead of the $5 they have been in the past. The reason for this increase is exactly the same as the reason for increasing members' dues: increased costs.

A number of students are now applying for election as Student Affiliates using the old application forms which state that dues are $5 a year. We are accepting these applications, and the $5 which accompanies each, and will continue to do so until November 20. After that date we will bill any Student Affiliate applicant at the new rate of $7.50.

All present Student Affiliates will receive dues bills for 1948 at the rate of $7.50 per year.

State Affiliates, Division Affiliates, and Foreign Affiliates will pay $4 a year. They receive the AMERICAN PSYCHOLOGIST and the *Yearbook* for their dues.

HOW DID YOU LIKE THE DETROIT PROGRAM?

The 1947 APA Program Committee tried out a number of innovations at the Detroit meeting. The Program Committee for 1948 wants to know how you liked them. Write to George Kelly, Department of Psychology, Ohio State University, Columbus 10, Ohio, and tell him.

On pages 486–488 you will find the report of the 1947 Program Committee. They ask a number of specific questions, for example:

Did you like the standard form for submitting abstracts?

Did the system of rating abstracts result in a higher average quality of paper scheduled?

How did the *Technical Problems Symposia* work out? Should we have more of them and fewer programs of short papers?

Did you like having papers grouped into a larger number of short programs (four papers each) better than having a smaller number of longer programs?

Did you enjoy the special lectures on Wednesday and Friday evenings?

Turn to page 486 and read the report of the Convention Program Committee. Then write to Dr. Kelly and tell him how you think the 1948 program can be made better than the one in 1947. DAEL WOLFLE

Psychological Notes and News

SELIG HECHT, professor of biophysics at Columbia University, died on September 18 at the age of 55 years.

D. P. MACMILLAN died on July 30, 1947.

FRANKLIN CRESSEY PASCHAL, head of the department of psychology at Wittenberg College, Springfield, Ohio, died September 12 at the age of 57 years.

JAMES S. PLANT, director of the Essex County Juvenile Clinic, Newark, N. J. died on September 7 at the age of 57 years.

HENRY A. RUGER died on July 17, 1947.

E. B. SKAGGS has resigned as chairman of the department of psychology at Wayne University. WILSON MCTEER has been appointed acting chairman. Dr. Skaggs had been chairman of the department for twenty-three years.

B. VON HALLER GILMER has been appointed professor and head of the department of psychology at the Carnegie Institute of Technology.

JAMES G. MILLER has been appointed professor of psychiatry and psychology and chairman of the department of psychology at the University of Chicago, effective January 1, 1948. HAROLD M. HILDRETH, Branch Chief Clinical Psychologist, Veterans Administration Branch Office 12, San Francisco, will succeed Dr. Miller as Chief, Clinical Psychology Section, Neuropsychiatry Division, Department of Medicine and Surgery, Washington, D. C.

GORDON V. ANDERSON, formerly on the staff at Northwestern University, has accepted a position as assistant director of the Testing and Guidance Bureau at the University of Texas. His work is concerned primarily with the selection, measurement, and counseling program.

HERBERT S. LANGFELD

HERBERT S. LANGFELD retired as Stuart professor of psychology and chairman of the department of psychology at Princeton University on June 30. He had been a member of the department for twenty-three years and its chairman for sixteen. In December he will retire as editor of the *Psychological Review*, a position he has held since 1934. Dr. Langfeld was business manager of the Psychological Review Company before the APA assumed ownership of its journals ten years ago.

Professor Langfeld will continue to live in Princeton and to occupy his office in Eno Hall. He is at work on the new Boring, Langfeld, and Weld text in general psychology, is serving as Permanent Secretary of the 12th International Congress of Psychology to be held in Edinburgh next July, and has recently been elected International Correspondent of the APA.

CARROLL C. PRATT has succeeded Professor Langfeld as chairman of the department at Princeton and

in January will succeed him as Editor of the *Psychological Review*. Professor Pratt recently returned from Turkey where for two years he was Ordinarius Professor of Psychology and Acting Director of the Institute of Philosophy in the University of Ankara. At the request of the Turkish Ministry of Education, Dr. Pratt collaborated with the rectors and deans of Istanbul and Ankara in the formulation of procedures which have given the Turkish universities administrative autonomy over instruction, research, appointments, and promotions. Control was formerly in the hands of the Ministry of Education.

Mrs. Pratt was assistant to the cultural attaché at the American Embassy in Ankara. She and Dr. Pratt devoted some time to the study of Turkish folk music.

The Reverend THOMAS VERNON MOORE, formerly professor of psychology and psychiatry at Catholic University, Washington, D. C., entered the Carthusian Monastary at Burgos, Spain in June. He took his vows on October 17.

ELIZABETH FEHRER, formerly a member of the psychology department at George Washington University, has been appointed to the staff at Michigan State College.

JOHN C. EBERHARD has been appointed Training Specialist in Psychology for the United States Public Health Service. His most recent appointment has been with the Surveys Section of the Veterans Administration.

D. B. KLEIN, formerly professor of psychology at the University of Texas; GEORGE R. BACH, formerly assistant professor of psychology at Kent State University; and WILLIAM W. GRINGS, formerly assistant professor of psychology at the University of Denver, have joined the staff of the department of psychology at the University of Southern California.

The Division of Education and Applied Psychology of Purdue University has announced the following appointments to its staff: L. M. BAKER as associate professor of psychology, FRANKLIN SHAW as assistant professor of psychology, RICHARD LEDGERWOOD as assistant professor of psychology, H. V. BARTLETT as assistant professor of psychology, and E. W. RYDEN as assistant professor of education.

PETER J. NAPOLI has been appointed Assistant Chief Psychologist, Veterans Administration, Brooklyn Mental Hygiene Unit, 35 Ryerson Street, Brooklyn 5, New York. He has requested that all communications concerning FINGER PAINTING be sent to the above address or to his home address at 3604 Avenue K, Brooklyn 5, New York.

The Pennsylvania State College has added four new staff members to the department of psychology. They are ALBERT K. KURTZ, JOSEPH H. GROSSLIGHT, and DENO G. THEVAOS in psychology; and GEORGE M. LOTT in psychiatry. The department is participating in an instructional film research project under the auspices of the Office of Naval Research. C. R. CARPENTER will serve as director, A. K. KURTZ as research analyst, and E. B. VAN ORMER as consultant. Other members of the department will assist with less time. Research fellows on the project are SOL M. ROSHAL, NATHAN JASPEN, and PHILIP ASH.

The Veterans Administration has recently established panels of psychological consultants to assist the clinical psychology program under the Department of Medicine and Surgery and the advisement and guidance program under the Office of Vocational Rehabilitation and Education. The consultants will advise the VA on questions of overall policy and general procedures such as (1) integration of psychological programs of the VA with each other and with other activities; (2) vocational, educational, and personal counseling, and psychotherapeutic principles, practices, and techniques; (3) selection and evaluation of diagnostic techniques; (4) research programs, including problems, design, methodology, statistical procedures, and reporting of results. Consultants to branch offices and field stations will generally advise on problems of a technical nature. The following consultants have been appointed: Central Office: HUGH M. BELL, WALTER V. BINGHAM, LEONARD CARMICHAEL, JOHN G. DARLEY, WILLIAM A. HUNT, JOHN G. JENKINS, CARL R. ROGERS, LAURANCE F. SHAFFER, CARROLL L. SHARTLE, M. R. TRABUE, E. G. WILLIAMSON and JOSEPH V. YARBOROUGH; Branch 1: GORDON W. ALLPORT, LEONARD CARMICHAEL, A. B. CRAWFORD, CARL I. HOVLAND, MARK A. MAY, F. L. WELLS; Branch 2: GEORGE BENNETT, J. MCV. HUNT, E. S. JONES, CARNEY LANDIS, C. M. LOUTTIT, MORTON A. SEIDENFELD, LAURANCE F. SHAFFER, ARTHUR

TRAXLER; Branch 3: ROBERT A. BROTEMARKLE, REX B. CUNCLIFFE, B. V. MOORE, GLENN V. RAMSEY, M. R. TRABUE, and LLOYD N. YEPSEN; Branch 4: WALTER V. BINGHAM, CHARLES N. COFER, JOHN G. JENKINS, G. FREDERIC KUDER, BEATRICE D. LAVIN; Branch 5: MITCHELL DREESE, A. S. EDWARDS, JOSEPH E. MOORE, V. M. SIMS, WILLIAM H. STEAD; Branch 6: ROGER BELLOWS, GEORGE A. KELLY, RENSIS LIKERT, DONALD G. MARQUIS, CARROLL L. SHARTLE; Branch 7: NORMAN CAMERON, WILLIAM A. HUNT, GILBERT J. RICH, CARL R. ROGERS, ELEROY L. STROMBERG; Branch 8: JOHN G. DARLEY, CARLYLE JACOBSEN, D. G. PATERSON, E. G. WILIAMSON, C. G. WRENN; Branch 9: JOSEPH E. BREWER, EDWINA A. COWAN, RAPHAEL C. MCCARTHY, FLETCHER MCCORD, FRED MCKINNEY, HYMAN MELTZER, BEULAH M. MORRISON, R. H. WATERS, M. O. WILSON; Branch 10: HERSHEL T. MANUEL, ROBERT SUTHERLAND, JOSEPH V. YARBOROUGH; Branch 11: FREDERICK A. COURTS, EDWIN R. GUTHRIE, LEONA TYLER; Branch 12: HUGH M. BELL, MARGARET E. BENNETT, HAROLD CARTER, ERNEST R. HILGARD, EDWARD C. TOLMAN, ROBERT C. TRYON; Branch 13: DANIEL D. FEDER, ARDEN FRANDSEN, L. W. MILLER, L. I. O'KELLEY.

DAVID K. SPELT, formerly of the University of Florida, has been appointed professor and chairman of the new department of psychology at Muhlenberg College, Allentown, Pennsylvania. Associated with Dr. Spelt will be CARL W. BOYER and ELMER K. KILMER. With the retirement of ISAAC MILES WRIGHT, for thirty years head of the department of education and psychology, two distinct departments have been organized. MILTON STEINHAUR will be chairman of the department of education.

A new psychology laboratory has been equipped, and courses in personnel practices and techniques, child psychology, comparative psychology and the history of psychology have been added to the curriculum.

THELMA HUNT has been appointed a Consultant to the Executive Secretary of the American Psychological Association to advise the Federal Post Office Inspectors on mail fraud cases of a psychological character. A number of cases similar to those described in the January 1947 AMERICAN PSYCHOLOGIST are now under investigation.

JOSEPH D. TEICHER is now psychiatrist in charge of the Child Guidance Clinic at St. Lukes Hospital, New York City. The Clinic is a new one which has recently been organized under Dr. Teicher's direction.

FREDERICK C. FRICK of Columbia University and MONCRIEFF H. SMITH of Stanford University have been appointed instructors in psychology at Harvard University.

SOL L. GARFIELD, formerly Chief Psychologist at the Veterans Administration Hospital, Mendota, Wisconsin, has been appointed to the staff of the department of psychology at the University of Connecticut.

The division of psychology of The Menninger Foundation has appointed WALTER KASS as chief of the adult testing section following the resignation of ROY SCHAFER. GERALD A. EHRENREICH joined the staff in September as a resident psychologist in the adult testing section and a research assistant on the government-sponsored hypnosis research project. ROBERT C. CHALLMAN was appointed on October 1 as director of the School of Clinical Psychology of The Menninger Foundation. He was formerly chief of psychological services of Winter Veterans Administration Hospital. DOROTHY M. SUTTON, assistant psychologist in the children's section, and LAURA MALKENSON, resident psychologist in the adult testing section, have been staff members of The Menninger Foundation since early in 1947.

SAMUEL A. KIRK, formerly director of the division of education for exceptional children, Milwaukee State Teachers College, has accepted a position as professor of education at the University of Illinois, Urbana, Illinois. He will organize and direct graduate and undergraduate programs in special education.

SEYMOUR WAPNER is serving as acting chairman of the department of psychology at Brooklyn College.

CARL H. WEDELL assumed the position as director of the Bureau of Industrial and Applied Psychology, Extension Division, University of Wisconsin, on November 1. The position carries the rank of associate professor. He was formerly Executive Secretary of the Board of Examiners for the Foreign Service, Department of State.

The following new appointments have been made to the psychology staff at Clark University: HEINZ WERNER, formerly of Brooklyn College, as professor of psychology; SIGMUND KOCH, formerly assistant professor at Duke University, as visiting associate professor; JOSEPH WEINREB, director of the Worcester Child Guidance Clinic, as a part-time member of the staff with the rank of professor (affiliate) of clinical psychology; and CLARENCE V. HUDGINS, research director at the Clark School for the Deaf, Northampton, Massachusetts, as part-time visiting lecturer in psychology.

B. F. SKINNER, Indiana University, is giving the William James Lectures on Psychology at Harvard University under the title "Verbal Behavior." The lectures are given on Friday afternoons at 4:15. The titles of the separate lectures and their dates are: October 10, "The Age of Words;" October 17, "Verbal Behavior as a Scientific Subject Matter;" October 24, "Types of Verbal Behavior;" October 31, "Words and Things: the Problem of Reference;" November 7, "Multiple Sources of Verbal Strength;" November 14, "Making Sentences;" November 21, "The Effect upon the Listener;" November 28, "Understanding: Real and Spurious;" December 5, "Thinking in Words;" December 12, "The Place of Verbal Behavior in Human Affairs."

At the University of Wyoming HUGH MCFADDEN has been appointed an associate professor. He had been head of the department of psychology and dean of the College at Western College in Oxford, Ohio. WILSON WALTHALL, formerly instructor at the University of Texas has been appointed assistant professor. He replaces MAX M. LEVIN who has gone to the State College of Washington. LORNE K. MCADAM has been appointed instructor.

Personnel Psychology, A Journal of Applied Research, will begin publication with a first issue in January, 1948. It will publish papers related to research in the personnel field in a way to make them read and understood by non-psychologists. Editor will be G. FREDERIC KUDER of Duke University. M. W. RICHARDSON, GEORGE K. BENNETT and W. V. BINGHAM will advise on editorial policy. The journal will appear quarterly with a subscription price of $6.00. Subscriptions should be sent to Erwin K. Taylor, 1727 Harvard Street, N.W., Washington 9, D. C.

RALPH STROM is directing a study of disabled veterans in colleges and universities. The study is financed by the Disabled American Veterans and directed by an advisory committee appointed by the American Council on Education. E. G. WILLIAMSON, University of Minnesota, is chairman of the advisory committee. Headquarters of the study are 800 Washington Avenue, S.E., Minneapolis, Minnesota. The project is intended to secure factual information concerning all phases of the college adjustment and college problems of disabled veterans and to make that information available to the colleges and the public.

The Executive Committee of the Association of Military Clinical Psychologists has announced the dissolution of that organization. It is possible for former members to obtain their share of available funds by writing to: HOWARD SIPLE, Treasurer, Association of Military Clinical Psychologists, University of Rochester, Rochester 3, New York.

The Survey Research Center of the Univerity of Michigan has announced the following new appointments to its professional staff: NATHAN MACCOBY as study director; FLOYD C. MANN as study director; FRANCES FIELDER, senior interviewer; NANCY C. MORSE as post-doctoral intern; JEANNE WATSON as assistant study director; and LENORE KORKES as research assistant.

Guidance and counseling programs will receive aid from the George-Barden Act, according to the *Educator's Washington Dispatch*. The Act provides for use of Federal funds for vocational guidance. The Office of Education is interpreting "vocational guidance" as referring to all phases of job adjustment, including personal, educational, social, physical, or psychiatric problems.

The U. S. Public Health Service announces that forms are now available for preparing applications for training grants in clinical psychology under the National Mental Health Act. The forms can be secured by writing to the Training and Standards Sec-

tion, Mental Hygiene Division, U. S. Public Health Service, Washington 25, D. C. Applications must be completed and returned to the Public Health Service by January 15, 1948 in order to be considered by the National Advisory Mental Health Council in the spring of 1948.

The National Vocational Guidance Association is proceeding to set up a national list of those vocational guidance services and agencies which the Association has adopted. Any individual practitioner, service, or agency which provides vocational guidance service as its sole function or as one of its functions may apply, except that school and institution services will not be included unless they offer service to the public as well as to their own personnel. There will be no charge for inclusion in this survey. Further information and application forms can be obtained from Miss Christine Melcher, Executive Secretary, National Vocational Guidance Association, 82 Beaver Street, New York 5, New York.

In the September AMERICAN PSYCHOLOGIST it was erroneously announced that the first report of the President's Commission on Higher Education, *Teachers for Higher Education*, was then available for distribution. Publication plans of the Commission now call for the distribution of this report early in 1948. Persons interested in a copy are invited to request one from the President's Commission on Higher Education, Room 1247, Federal Reserve Building, Washington 25, D. C.

In the last legislature in Pennsylvania the Act of May 25, 1937, applying to commitments of delinquent defectives, was amended to provide for an examination by a qualified psychologist as part of the commitment procedures. It was the first time that legal provisions were made for a psychologist to take part in the commitment procedures within the Department of Welfare in Pennsylvania.

The Institute of Community Relations, a research sort for the study of relationships between social factunit and disease, has been established at Sydenham Hospital, New York City. The project is set up in cooperation with Columbia University's Bureau of Applied Social Research, which will participate in the selection of research topics, technical consultation on research in progress, and provision of research facilities. The Institute will provide field experience in research for graduate students in Columbia's department of sociology. JOHN A. MORSELL has been named director of the Institute.

The Reading Clinic Staff of the department of psychology at Temple University will hold its annual Institute on Corrective and Remedial Reading on January 26 to January 30, 1948. Seminars and demonstrations will be conducted by well-known specialists in reading and related fields. Enrollment is limited by advance registration and must be confirmed prior to the Institute. For information write to: Dr. Emmett A. Betts, Director of the Reading Clinic, Temple University, Philadelphia 22, Pennsylvania.

GEORGE LAWTON, S. L. PRESSEY, and MARTIN L. REYMERT are members of the National Advisory Council for Research in Gerontology for Moosehaven, a city for the aged near Jacksonville, Florida. It is planned to establish Moosehaven as a model city for the care of the aged and to develop and support research in problems of gerontology. Inquiries concerning Moosehaven may be addressed to Dr. Martin L. Reymert, Mooseheart, Illinois.

A National Conference on the Psychological Diagnosis and Counseling of the Adult Blind will be held at the University of Michigan on November 17, 18, and 19. The objectives of the conference are: (1) to acquaint rehabilitation personnel with sound techniques and methods for use in psychological and vocational diagnosis and in counseling the adult blind; (2) to provide a forum for the exchange of information and practices between specialists and rehabilitation personnel; (3) to demonstrate, through the staffing of cases, the application of psychological principles and techniques to counseling problems; (4) to delineate research problems and methods which are fundamental to the improvement of psychological and rehabilitation services for the adult blind. Inquiries may be addressed to the Conference Chairman, Bureau of Psychological Services, University of Michigan, 1027 E. Huron Street, Ann Arbor, Michigan.

Convention Calendar

AMERICAN PSYCHOLOGICAL ASSOCIATION

September 7–11, 1948; Boston, Massachusetts
For information write to:
Dr. Dael Wolfle, American Psychological Association
1515 Massachusetts Avenue, Washington 5, D. C.

SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

March 25–27, 1948; Atlanta, Georgia
For information write to:
Dr. Joseph Weitz, Newcomb College, Tulane University
New Orleans, Louisiana

MIDWESTERN PSYCHOLOGICAL ASSOCIATION

May 7–8, 1948; St. Paul, Minnesota
For information write to:
Dr. Claude E. Buxton, Department of Psychology
Northwestern University, Evanston, Illinois

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

December 26–31, 1947; Stevens Hotel, Chicago, Illinois
For information write to:
Dr. John M. Hutzel, A.A.A.S.
1515 Massachusetts Avenue N.W.
Washington 5, D. C.

EASTERN PYCHOLOGICAL ASSOCIATION

April 16–17, 1948; Temple University, Philidelphia
For information write to:
Dr. Harold G. Seashore, Psychological Corporation
522 Fifth Avenue, New York 18, New York

ROCKY MOUNTAIN BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Date to be announced; Colorado State Teachers College. Greeley, Colorado
For information write to:
Dr. Lillian G. Portenier, University of Wyoming
Laramie, Wyoming

NATIONAL COMMITTEE FOR MENTAL HYGIENE

November 12–13, 1947; Hotel Pennsylvania, New York
For information write to:
National Committee for Mental Hygiene
1790 Broadway, New York 19, New York

NATIONAL VOCATIONAL GUIDANCE ASSOCIATION

March 29–April 1, 1948; Hotel Stevens, Chicago
For information write to:
Miss Christine Melcher, Exec. Sec'y N.V.G.A.
82 Beaver Street, New York 5, New York

Announcing...

WORK AND EFFORT

The Psychology of Efficiency

By

Thomas Arthur Ryan

Associate Professor of Psychology, Cornell University

A SYSTEMATIC survey of psychological investigations concerned with the productivity of men and women at work. It at once presents an evaluated account of the knowledge that has been accumulating for many years and gives a survey of current progress.

Among the problems treated are training and learning, the control of accidents, the selection of workers, motivation of the worker, and such. Conclusions presented are drawn from varied research based upon reliable experimental and statistical techniques. These include a study of the factors of light, heat, and ventilation, the con rol of monotony and fatigue, and conditions that make for maximum output without excessive effort or fatigue. The book aims to acquaint the reader with the methods of research used.

Will be useful to psychologists, also of value as a text or reference source for students interested in industrial psychology; to all in industry who are concerned in setting standards, installing merit rating and job evaluation systems, and in improving the morale and efficiency of workers, by the use of tested, scientific methods. *$4.50*

CONTENTS: Introduction. The Meaning of Efficiency and Economy of Work. Measuring the Cost of Work: Metabolism and Muscular Fatigue; Fatigue in Sedentary Work; Physiological Tests of Effort and Fatigue in Sedentary Work, Statistical Indices of Efficiency. Specific Factors Governing Efficiency and Productivity. Work Methods and Efficiency. Incentives and Motives. Nervous Fatigue and Boredom. Time Standards and Rate Setting. Merit Rating and Job Evaluation. Psychological Problems of Accident Control. Skill and Practice.

THE RONALD PRESS COMPANY
15 East 26th Street, New York 10

THE AMERICAN PSYCHOLOGIST

The Professional Journal of the American Psychological Association, Inc.

Volume 2 | December, 1947 | Number 12

In this Issue

Recommended Graduate Training Program in Clinical Psychology:
Report of the Committee on Training in Clinical Psychology of the American Psychological Association submitted at the Detroit meeting of the American Psychological Association, September 9–13, 1947 539

A Multiple Cubicle Bench for the Student Laboratory in Psychology:
CARL PFAFFMANN 559

Across the Secretary's Desk 561

Mrs. J. P. Symonds (portrait) 562

Psychological Notes and News 563

Index to Volume II 566

THE AMERICAN PSYCHOLOGIST is published monthly by the American Psychological Association, Inc., at Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Subscription: $7.00, single copy $.75. Communications on business matters should be addressed to Publishers, The American Psychologist, Mount Royal and Guilford Avenues, Baltimore 2, Maryland, or the American Psychological Association, Inc., 1515 Massachusetts Ave., N.W., Washington 5, D. C. Address communications on editorial matters to 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Dael Wolfle, *Editor*

Entered as second-class matter January 9th, 1946 at the Post Office at Baltimore, Md., under the Act of March 3rd, 1879. Acceptance for mailing at special rate of postage provided for in section 538, Act of February 25, 1925, authorized August 6, 1947.

OFFICERS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

President

DONALD G. MARQUIS
University of Michigan
Ann Arbor

President-elect	*Recording Secretary*	*Treasurer*	*Executive Secretary*
ERNEST R. HILGARD Stanford University California	HELEN PEAK Connecticut College New London	CARROLL L. SHARTLE The Ohio State University Columbus 10, Ohio	DAEL WOLFLE 1515 Massachusetts Ave., N.W. Washington 5, D. C.

Board of Directors

THE PRESIDENT, THE PRESIDENT-ELECT,
THE RECORDING SECRETARY, AND THE TREASURER

JOHN F. DASHIELL
RICHARD M. ELLIOTT
CLARENCE H. GRAHAM
LAURANCE F. SHAFFER
ROBERT R. SEARS
THEODORE M. NEWCOMB

All general communications, inquiries concerning membership, letters concerning dues, subscriptions, and changes of address, announcement of posts, and requests for placement should be directed to:

AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

PUBLICATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AMERICAN PSYCHOLOGIST

Editor: DAEL WOLFLE, *American Psychological Association.* Contains all official papers of the Association and articles concerning psychology as a profession; monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $.75.

APPLIED PSYCHOLOGY MONOGRAPHS

Editor: HERBERT S. CONRAD, *College Entrance Examination Board, Princeton.* Contains longer researches and studies in the field of applied psychology; published at irregular intervals at a cost to author of about $2.00 a page.
Single copies only, price varies according to size.

JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

Editor: GORDON W. ALLPORT, *Harvard University.* Contains original contributions in the field of abnormal and social psychology, reviews, and case reports; quarterly.
Subscription: $5.00 (Foreign $5.25). Single copies, $1.50.

JOURNAL OF APPLIED PSYCHOLOGY

Editor: DONALD G. PATERSON, *University of Minnesota.* Contains material covering applications of psychology to business, industry, and education; bi-monthly.
Subscription: $6.00 (Foreign $6.50). Single copies, $1.25.

JOURNAL OF COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY

Editor: CALVIN P. STONE, *Stanford University.* Contains original contributions in the field of comparative and physiological psychology; bi-monthly.
Subscription: $7.00 (Foreign $7.50). Single copies, $1.25.

JOURNAL OF CONSULTING PSYCHOLOGY

Editor: LAURANCE F. SHAFFER, *Teachers College, Columbia University.* Contains articles in the field of clinical and consulting psychology, counseling and guidance; bi-monthly.
Subscription: $5.00 (Foreign $5.50). Single copies, $1.00

JOURNAL OF EXPERIMENTAL PSYCHOLOGY

Editor: FRANCIS W. IRWIN, *University of Pennsylvania.* Contains original contributions of an experimental character; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL ABSTRACTS

Editor: C. M. LOUTTIT, University of Illinois, Galesburg, Illinois. Contains noncritical abstracts of the world's literature inpsychology and related subjects; monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $.75.

PSYCHOLOGICAL BULLETIN

Editor: LYLE H. LANIER, *Vassar College.* Contains critical reviews of books and articles and critical and analytical summaries of psychological fields or subject matter; bi-monthly.
Subscription: $7.00 (Foreign $7.25). Single copies, $1.25.

PSYCHOLOGICAL MONOGRAPHS

Editor: JOHN F. DASHIELL, *University of North Carolina.* Contains longer researches and laboratory studies which appear as units; published at irregular intervals at a cost to author of about $2.50 a page; author receives 150 copies gratis.
Subscription: $6.00 per volume of about 350 pages (Foreign $6.30). Single copies, price varies according to size.

PSYCHOLOGICAL REVIEW

Editor: HERBERT S. LANGFELD, *Princeton University.* Contains original contributions of a theoretical nature; bi-monthly.
Subscription: $5.50 (Foreign $5.75). Single copies, $1.00.

RECOMMENDED GRADUATE TRAINING PROGRAM IN CLINICAL PSYCHOLOGY

REPORT OF THE COMMITTEE ON TRAINING IN CLINICAL PSYCHOLOGY OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION SUBMITTED AT THE DETROIT MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION, SEPTEMBER 9–13, 1947*

AT THE meeting of the Board of Directors of the American Psychological Association in Ann Arbor, March 28–30, 1947, the President was authorized to appoint a special Committee on Training in Clinical Psychology to perform the following tasks:

a. Formulate a recommended program for training in clinical psychology.

b. Formulate standards for institutions giving training in clinical psychology, including both universities and internship and other practicum facilities.

c. Study and visit institutions giving instruction in clinical psychology, and make a detailed report on each institution.

d. Maintain liaison with other bodies concerned with these problems, including the committees of the American Orthopsychiatric Association, the National Committee for Mental Hygiene, and others.

The undersigned persons constitute the Committee as finally appointed. The Committee, because of the relatively short period that it has had to work, has limited itself in this report to presenting a recommended program of training in clinical psychology.

The work of our Committee insofar as it relates to a training program grows naturally out of the activities of several previous committees and groups. The historical aspects of the development of clinical psychological training has been thoroughly covered by Morrow (*9*). Of particular relevance are the 1943 "Proposed Program of Professional Training in Clinical Psychology" of the Committee on Training in Clinical (Applied) Psychology (*1*) and the 1945 Sub-committee Report on "Graduate Internship Training in Psychology" (*4*). A recent issue of the Menninger Bulletin (July 1947) describing "The Menninger Foundation School of Clinical Psychology" and the July 1946 "Internship and Externship Programs" issue of the *Journal of Consulting Psychology* are also of considerable importance in this context. The report of the Committee on Graduate and Professional Training (*10*), although more directly related to future activities of our Committee, in some respects also bears on the present report.

The program here presented is especially timely because of the existing ferment in the field of psychology, particularly in the area of clinical psychology. The Harvard University Commission's report (*6*) suggests some of the possibilities which lie ahead of psychology in the near and distant future. With respect to clinical psychology, one sees on the one hand the breathless preoccupation with actual training which has resulted largely from the Veterans Administration and United States Public Health Service programs, and on the other hand the deep concern with the goals and trends of this training both within the Psychological Association and on the part of organizations interested in the fields with which clinical psychology is associated. The Josiah Macy Jr. Foundation has held the first of a series of Conferences on Clinical Psychology (*8*); the American Psychiatric Association and the Group for the Advancement of Psychiatry have Committees on Clinical Psychology and the American Orthopsychiatric Association and the National Committee for Mental Hygiene are engaged in activities which in one respect or another involve the evaluation of the functions of clinical psychologists. It is, therefore, especially desirable that the Association set forth its own official policy in this important matter of training and that it play the major role in determining the content and goals of such a program.

We are cognizant of the great difficulties which the shift from an academic to a professional program involves in a university setting. We recognize that

*The Committee wishes to acknowledge with gratitude the aid received from the following persons who read preliminary drafts of the report: Mrs. Ethel L. Ginsburg, Mrs. Elizabeth H. Ross, Drs. Alan Gregg, Robert R. Holt, James G. Miller, and David Rapaport.

this change must take much effort and time and that even were it possible to set up a fairly fixed schedule of training, such a step would at present be both premature and ill-advised because of the great need for experimentation in ways of implementing a sound program. We are therefore emphasizing the goals and principles of what we consider a desirable program rather than attempting to lay out a detailed blueprint. We have decided to limit our present consideration of training to a program at the four-year doctoral level because of our firm conviction that professionally qualified persons cannot be given adequate background training in less time. This is in line with a decision independently arrived at by the Policy and Planning Board (*2*) that further training of clinical psychologists at the MA level be discontinued. It should be emphasized however, that this decision does not preclude the training of persons to apply psychological principles in specialized areas such as remedial teaching, vocational and educational counseling, educational testing, etc. However, such persons are in our opinion not clinical psychologists and the present report is not concerned with their training. We have further decided not to let our program be determined in any way by present practices in training which arise from special situations such as those created by the financial arrangements of the Veterans Administration. We have, rather, tried to present what we consider ideally desirable in the present state of our knowledge, and we have left to the university the practical working out of the program according to local conditions.

PRE-PROFESSIONAL REQUIREMENTS

In that wise volume, "Medical Education," (*5*, p. 176), Abraham Flexner says "... the medical school cannot expect to produce fully trained doctors; it can at most hope to equip students with a limited amount of knowledge, to train them in the method and spirit of scientific medicine and to launch them with a momentum that will make them active learners—observers, readers, thinkers, and experimenters—for years to come.... The general arrangement of the curriculum, if sound, can make this task a bit easier, or if unsound, a bit harder; but in general much more—very much more—depends on teacher and student than on curricular mechanics or teaching devices."

If we substitute clinical psychology for medicine, this statement expresses the essential point which we wish to make in this report. Our task is to find good teachers to give good students good training that will start them off in the first stages of their careers as clinical psychologists. This report will be concerned in some detail with ways of meeting the problems that arise in attempting to achieve this task.

What specific goals do we have in mind in the preparation of the clinical psychologist? Clinical psychology seeks to acquire systematic knowledge of human personality and to develop principles and methods by which it may use this knowledge to increase the mental well-being of the individual. If we recognize that clinical psychology is both a science and an art calling for scientific rigor tempered by personal and social sensitivity, we can specify these goals fairly clearly. The more carefully the present scene is examined and the more thoughtfully the future is viewed, the more convinced are we of the need for preparing the clinical psychologist with a combination of applied and theoretical knowledge in three major areas: *diagnosis*, *therapy* and *research*. The purpose is not to develop persons with encyclopedic proficiencies nor is it directed at disproving the contention of some that the scientific and therapeutic attitudes mix poorly in the same person (a view which we are unwilling to accept until definite proof is forthcoming). Rather is it our purpose to see that the necessary broad training is provided that will make later specialization on a sound foundation possible. It becomes increasingly clear that persons having a specialized background in only part of one of these fields, for instance, Rorschach testing, or counseling, or electroencephalographic research, cannot function adequately. We go even beyond this and say that broad training, if it is in only one of the three major areas, is quite inadequate for ordinary clinical psychological work, to say nothing of teaching and preventative endeavors, two major fields of activity which require special attention.

The ability to carry out effectively the combination of functions called for depends upon the clinical psychologist's being the right kind of person, a person who has a relevant informal experience background into which has been integrated the proper formal education, both undergraduate and graduate.

What characteristics does the "right kind" of person possess? As yet, we do not know definitely, for research on this important problem has only

begun. It is generally agreed, however, that especially important are the personality qualifications represented by a reasonably well-adjusted and attractive personality. Until dependable research data are available, the following list, which includes the kind of specific qualities experienced observers believe clinical work calls for, may be useful:

1. Superior intellectual ability and judgment.
2. Originality, resourcefulness, and versatility.
3. "Fresh and insatiable" curiosity; "self-learner."
4. Interest in persons as individuals rather than as material for manipulation—a regard for the integrity of other persons.
5. Insight into own personality characteristics; sense of humor.
6. Sensitivity to the complexities of motivation.
7. Tolerance; "unarrogance."
8. Ability to adopt a "therapeutic" attitude; ability to establish warm and effective relationships with others.
9. Industry; methodical work habits; ability to tolerate pressure.
10. Acceptance of responsibility.
11. Tact and cooperativeness.
12. Integrity, self-control, and stability.
13. Discriminating sense of ethical values.
14. Breadth of cultural background—"educated man."
15. Deep interest in psychology, especially in its clinical aspects.

The list is formidable but in the present state of our knowledge, represents the kind of selection goals towards which we must work. Characteristics of this type seem a necessary foundation for work in a field which requires so much in the way of maturity, sensitivity, and knowledge.

How are we to obtain such persons for training? Problems of both recruitment and selection are involved. The problems of recruitment are more difficult than they are in such major professional fields as medicine and law, since the latter are well-established and known to youngsters from quite early years. For the present, the major effort in recruiting will have to be made at the college level through teachers of psychology and vocational advisors who are on the lookout for promising candidates. In coming years, growing general acquaintance with the field and the multiplication of earlier courses in psychology at the secondary level are likely to lead the student to think of clinical psychology as a life-work. The first rough selection could then come in the secondary schools.

Beyond the problem of recruiting a sufficiently large number of persons to maintain the necessary supply of clinical psychologists lies the major task of proper selection at the point of entrance into graduate work. Here, besides the ordinary selective devices such as are provided by the credentials of the candidate, the Graduate Record Examination and the devices which are being developed in the "Research Project on the Selection of Clinical Psychologists under contract with the Veterans Administration" under the auspices of the University of Michigan (7) should be of help in selecting the best candidates. It is not necessary to elaborate on the obvious point that besides rigorous selection at the point of entrance into graduate work a process of selection must go on throughout the program.

Given the proper kind of person, what may we expect of him in the way of informal background experience which may be considered relevant? For the present we shall devote our attention to the non-academic experiential background of the person. Since it seems reasonable to expect the clinical psychologist to be interested in people and have a broad base of human contacts, he should have had experiences, particularly in his college years (summer holidays and other spare time), involving close relations with both ordinary and unusual persons in field, factory, institution, or laboratory. In addition to direct contact with people of various kinds he should have had the indirect acquaintance with people that comes from immersion in great literature, because of the emphasis which such portrayals place on the molar aspects of behavior and the insights into human nature that they give. Anything that reading may accomplish to broaden his acquaintance with the wide range of psychological expression, whether in relation to individuals or cultures, is so much relevant background for him.

What can we say about the formal educational background which we may expect from the candidate who is entering the graduate program? Two distinct points of view are generally expressed. On the one hand, there is some demand that students come with a common, fairly defined background, especially in psychology, in order to make graduate

instruction easier. On the other hand, some hold that, for the broad development of the field, to cast all the participants in the same mold would be undesirable. Medicine, the proponents of this view indicate, has experimented with a rather rigid prerequisite program but is raising more and more question about its desirability. The solution probably lies somewhere between the two points of view. It seems to us that certain general requirements for the undergraduate program which the student could ordinarily be expected to meet can be laid down. In exceptional cases, provision to waive these should, of course, be made.

The undergraduate program must be recognized as at most *pre*-professional. The professional and the more advanced courses in psychology should in general not be open to the undergraduate. The undergraduate program should be directed at providing a broad cultural and scientific base for specialized graduate study. The courses should help the student to attain a first insight into the structure and dynamics of human behavior, an understanding of the biological and social development of the individual, and a preliminary acquaintance with the principles and methods of collecting and evaluating data.

More specifically, as an example of what a basic undergraduate program might include, the following is presented:

1. *Psychology.* An approximate optimum of twenty semester hours, to consist essentially of courses for undergraduates. The student must be permitted to take a sufficient number of psychology courses to enable him to acquire a fair acquaintance with the content of the field of psychology, both in its general and in its laboratory aspects, but he should not be permitted to concentrate heavily in it. The main emphasis should be on courses in dynamic psychology[1] which consider crucial human problems at a fairly rigorous scientific level. Mass "titillating" courses directed at the general student body are definitely not what we have in mind here.

2. *Biological and physical sciences.* Approximately twenty semester hours of which the major part should preferably be in biology including genetics, and the balance in physics and chemistry. Satisfactory secondary school preparation in the latter two would reduce the amount required at the college level.

3. *Mathematics and statistics.* Approximately nine semester hours in mathematics and statistics, with special emphasis on their logical principles.

4. *Education.* Approximately six semester hours in the fundamentals of educational philosophy, and experimental didactics in the form of practice teaching, if this can be arranged.

5. *Social sciences.* Approximately twelve semester hours in sociology, anthropology, and economics. (Political science or history might be substituted for the last.)

6. *History of Culture.* Approximately nine semester hours in history of civilization, comparative literature, comparative religion, philosophy, etc.

7. *Psychology as revealed in literature.* Approximately six semester hours in "literary psychology" if this can be arranged.

8. *Languages.* Reading knowledge of French and German. (Some consideration should, however, be given to the desirability of substituting other languages, for example, Spanish and Russian.)

We wish to emphasize that the undergraduate program cannot be appraised according to credit hours or in relation to specific courses. Each candidate's record must be examined on its merits to see how far it meets the spirit of the background requirements of breadth, good introductory acquaintance with psychology, and fair acquaintance with the biological and social sciences. If a choice is to be made between the latter two groups, there seems some reason for postponing further study of the social sciences to the graduate period. The student, being more mature at this time, is better able to grapple with its relatively greater uncertainties.

[1] We shall have occasion to refer repeatedly to "dynamic psychology," a term which has to some extent taken on the "blessedness" of James' old lady's "Mesopotamia." Because of this, the term is not in good repute with some persons. However, we find no term so satisfactory for describing what we have in mind—the "how" and "why" of human behavior as opposed to the static, structural "what." Without getting involved in what would in the present context be merely irrelevant semantics, the definition given in Warren: "A systematic interpretation of mental phenomena, regarded as a succession of causes and effects with emphasis upon internal drives and motives," or the definition provided by one of us: "Fundamental theories of motivation, conflict, and resolution of conflict, applied to an understanding of normal and abnormal behavior" essentially describes what we refer to as "dynamic psychology."

GRADUATE PROFESSIONAL PROGRAM

General Principles. The general principles which underlie the graduate program appear to us of primary importance—in fact much more important than the details of the program. If clarity in the formulation of goals exists, there should be relatively little difficulty about agreeing on the means for implementing them. As has already been indicated, it is the opinion of the Committee that the setting up of a detailed program is undesirable. Such a step, if accepted generally, would go far in settling clinical psychology at a time when it should have great lability. Considerable experimentation with respect to the personality and background of students as well as the content and methods of courses will for a long time be essential if we are to develop the most adequate program. Our aims are rather to achieve general agreement on the goals of training and encourage experimentation on methods of achieving these goals and to suggest ways of establishing high standards in a setting of flexibility and reasonable freedom. We also hold that the goals should not be determined by special situations and special demands, but should be oriented toward the question of what is the best training for the clinical psychologist.

Against this general background the principles which we consider important are the following:

1. A clinical psychologist must first and foremost be a *psychologist* (*2*) in the sense that he can be expected to have a point of view and a core of knowledge and training which is common to all psychologists. This would involve an acquaintance with the primary body of psychological theory, research, and methods on which further training and interdisciplinary relationships can be built.

2. The program of education for the doctorate in clinical psychology should be as rigorous and extensive as that for the traditional doctorate. In general this would represent at least a four-year program which combines academic and clinical training throughout but which includes intensive clinical experience in the form of an internship.

3. Preparation should be broad; it should be directed to research and professional goals, not to technical goals. Participants should receive training in three functions: diagnosis, research and therapy, with the special contributions of the psychologist as a research worker emphasized throughout. Although many will probably tend to specialize in one or another of these areas after obtaining the degree, the Committee feels strongly that there should be training in each of these areas during the graduate period. We are particularly concerned that training shall be of such a quality as to eliminate the possibility that a technician, whether in the sense of a directive or nondirective counselor, a Multiphasic specialist, a Binet tester, a Rorschach specialist, or a remedial instructor, will be turned out as a clinical psychologist, and so depended upon for a range of work he will be unable to do.

4. In order to meet the above requirements the program calls for study in six major areas: a. General psychology; b. Psychodynamics of behavior; c. Diagnostic methods; d. Research methods; e. Related disciplines; f. Therapy. Such a program should go far towards reducing the dangers inherent in placing powerful instruments in the hands of persons who are essentially technicians, persons who from the standpoint of the academic group have no real foundation in a discipline, and who from the standpoint of the clinical group have no well-rounded appreciation of the setting in which they function.

5. The program should concern itself mainly with basic courses and principles rather than multiply courses in technique. It is simple to organize a program that includes innumerable courses of the latter type and come out in the end with a poorly trained person. The stress should be laid on fewer, well-integrated courses which subtly but inevitably leave the student with a sound background, on which he can build knowledge of techniques as he needs them. The courses should be so arranged that more advanced courses really call for knowledge acquired in preceding courses and are built on these. This has too infrequently been true in psychology graduate programs with the result that students have not had the clear notion of progress towards a goal that law students and medical students have. The relationship of the course material to personality theory should be constantly emphasized and unless the whole program is oriented in this direction we doubt its final effectiveness for achieving the stated goals.

6. Courses should be scrutinized for their content, rather than judged by their titles. Equally important is the way the content is handled, that is, the quality of the teachnig. Other factors to be evalu-

ated are the internal integration of the course and its integration with other courses, both academic and field. Departments of psychology have perhaps been too much concerned with providing their instructors with freedom to organize their courses as they saw fit under an assigned title. This has frequently resulted in considerable duplication in courses and in the omission of important areas. In either case the student suffered. Without in any way infringing on the instructor's fundamental freedom, it would seem possible, through department and individual conferences, for instructors to lay out courses which are complementary and supplementary to the others given, rather than overlapping because they are ignorant of the general content of colleagues' courses. Courses should as much as possible involve active student participation in preference to merely requiring listening or even watching demonstrations. Individualization of instruction, detailed personal supervision, and the encouragement of initiative and self-reliance must be recognized as important aspects of the teaching. The student should come in contact with a number of instructors representing a variety of points of view and types of experience.

7. The specific program of instruction should be organized around a careful integration of theory and practice, of academic and field work, by persons representing both aspects. Just as there is great danger, in the natural revolt against "academic" dominance, of ending up with a "practical" program, so is there danger in the continued dominance of the academy. It is important to break down the barriers between the two types of approach and through their smooth integration impress the student with the fact that he is taking *one* course of training provided by *one* faculty.

8. Through all four years of graduate work the student should have contact, both direct and indirect, with clinical material. This can be accomplished in the theoretical courses through the constant use of illustrative case material with which the instructor has had personal contact. The student should from the first year be provided with opportunities for actual contact with human material in naturalistic, test, and experimental situations in the setting of practicum, clerkship, and internship. Throughout, the effort should be made to maintain and to build upon that most valuable quality, the naive enthusiastic interest in human beings, with which the student first comes into the training program.

9. We have just made the point that the student should have contact with clinical material throughout the four years of training. Equally important is the need for contact with normal material. Opportunities should be provided to enable the student to become acquainted with the range of normal and borderline persons who never establish clinical contacts. Such training is essential in order to keep the student balanced in his interpretation and understanding of the abnormal.

10. The general atmosphere of the course of training should be such as to encourage the increase of maturity, the continued growth of the desirable personality characteristics earlier considered. The environment should be "exciting" to the degree that the assumed "insatiable" interest in psychological problems is kept alive, the cooperative attitude strengthened, and the passivity usually associated with so much of traditional teaching kept at a minimum. The faculty must recognize its obligation to implant in students the attitude that graduate work is only the beginning of professional education.

11. A distinct weakness in the training of psychologists, when compared with that of physicians and social workers, is the lack of sufficient feeling of responsibility for patients and clients.[2] The program should do everything possible to bring out the responsibilities associated with the activities of the psychologist. There should be persistent effort to have the student appreciate that his findings make a real difference to a particular person and to that person's immediate group.

[2] The words "patient" and "client," although not quite satisfactory terms for the person with whom the psychologist establishes "interpersonal relationships," are used throughout this report, either together or singly, but always interchangeably. Because of the variety of situations in which the clinical psychologist is called upon to work—medical and non-medical, normal and abnormal—neither term accurately designates all the persons with whom he deals. The old psychological term "subject" is sufficiently broad, but unsatisfactory because of its implications of exaggerated dominance and direction; the other old term "observer" is even more unsatisfactory because of the implication of emotional distance and marked non-dependence which it carries. For the present, to avoid awkwardness in expression, we must be satisfied with "patient" or "client," with the understanding that either term carries the broader meaning here indicated.

12. A systematic plan should be laid to use representatives of related disciplines for teaching the trainee in clinical psychology, and opportunities for joint study with students in these disciplines should be provided. Through these approaches the student learns to work closely and in cooperative fashion with those whose methods may be different but whose goals are quite similar. In these settings he learns to acquire modesty about his own contribution, and to value the "team" approach to the problems of both a service and research nature that he meets, problems which, because of their difficulty and complexity, require a concentrated group attack. In the service aspect he must learn that the team approach calls for the coordinated thinking of various specialists on the problems of a particular patient and that participation in such group activity involves not only immediate, but continuing, responsibility for the client, whether direct or delegated, on the part of all of the members of the team.

13. Throughout the course of training there should be an emphasis on the research implications of the phenomena with which he is faced, so much so that the student is finally left with the set constantly to ask "how" and "why" and "what is the evidence" about the problems with which he is faced. There is probably no more important single task placed on the teaching staff than this direction towards research.

14. In addition to the research implications of the data he should become sensitive to their social implications; he must acquire the ability to see beyond the responsibilities he owes to the individual patient to those which he owes to society. Medicine has developed a code which is admirable so far as concerns responsibility to the individual patient, but has paid relatively less attention to the other type of responsibility. It is our hope that psychologists will gradually acquire more of the medical attitude towards individual patients but develop a high degree of social responsibility as well.

Program of Graduate Training.

As has already been indicated, the program of graduate training falls naturally into six major instructional areas: general psychology, dynamics of human behavior, related disciplines, diagnostic methods, therapy, and research methods. For purposes of exposition of the general plan it seems best to consider the program according to these categories rather than by school year. Under each heading will be discussed the progressively advancing courses falling roughly into the particular category. The classification is, of course, arbitrary and there is a considerable amount of overlapping in both the theoretical and practical aspects. The description of an experiment in perception, for instance, can be significant not only because it points up fundamental perceptual theory, but it can also do the same for psychodynamic theory, research methodology, and physiological relations and—it is not inconceivable—for therapy.

Although it is not our intention to encourage filling up the student's time with courses to so great an extent as is the present practice, for instance, in the medical program, it is still our belief that graduate students in this program can carry heavier schedules than are ordinarily called for by graduate schools. The students must be given time to read and think but we believe these goals need not be sacrificed—in fact they might even be strengthened—if the program were thought of as requiring more semester hours of teaching contact through the year in order to get in *necessary* course work.

A. *General Psychology.* In view of the fundamental tenet accepted by the Committee, namely, that clinical psychologists are primarily psychologists, it is clear that due attention must be paid to preparation in the general aspects of psychology. It is our hope, however, that in the presentation of the general courses now under consideration instructors will keep in mind the need for including material related to personality theory and that they will consider the implications of the phenomena they are discussing in the context of total behavior. It is our hope, too, that the trend of the past towards emphasizing the segmental aspects exclusively will be considerably reduced. The courses[3] in this category which should generally be included are:

1. General, physiological, and comparative psychology.
2. History of psychology and contemporary schools of thought.

[3] At this point and elsewhere when specific courses are considered we have deliberately refrained from indicating the semester hours to be devoted to them. We conceive of some of these as being three-hour courses and others as much as 12-hour courses. The decision as to their length had best be left to the individual university.

3. Developmental psychology—Fundamental theories of genetic development: child, adolescent and adult; individual differences.
4. Social psychology.

B. *Psychodynamics of Behavior.* If we are to develop the kind of clinical psychologist this program aims for, considerably more emphasis than in the past will have to be placed on permeating the program with theory of personality and psychodynamics. There is no other aspect of the program that is more important and that has so many ramifications. If a dynamic orientation is what we are after, then there can be no half-measures. To accomplish such a purpose it is necessary that as many of the instructors as possible be well acquainted with psychodynamic theory and that they present their material in the light of such theory both in the classroom and in the field. The suggested courses in this area are:

1. Dynamic psychology—Fundamental theories of personality and motivation of normal and abnormal behavior.

2. Experimental dynamic psychology—Conferences and laboratory work. Starting with a selected group of classical experiments in general psychology that bring out fundamental experimental principles, the course might go on to the consideration of the theory and design of clinical research and experiments on personality characteristics and dynamics. It should also involve the critical analysis of published studies and the application of experimental techniques to actual problems in the clinical field. Some university might perhaps be interested in the experiment of conducting this course concurrently with the previous course—conceivably even as a single unit.

3. Psychopathology—The consideration of symptoms and symtom complexes in various mental disorders with emphasis on nosology to some extent but more particularly on the mechanisms and dynamics behind symptoms. The course should be organized largely around actual case presentations.

C. *Diagnostic Methods.* Diagnostic study has taken on an increasingly important role in the functioning of the clinical psychologist. This statement may seem somewhat anomalous considering the fact that for a long time "testing" was widely considered the only function of the clinical psychologist. The difference lies in the fact that whereas the functions of the clinical psychologist have been broadened considerably there has been an equal broadening of the concept of what testing involves and a great expansion of the variety of procedures available to him. Besides standard tests there are work samples, psychodrama, real life segments, and situational tests among the methods now at his command. At one time diagnosis implied merely a type of "pigeon-holing." At present this represents only a minor aspect of what is called for. Now diagnosis concerns itself with the origin, nature, and especially the dynamics of the conditions under investigation, and with suggesting hypotheses as to outcome under varying forms of disposition. Its important contribution to personality research, to psychiatric diagnosis, and to therapy are being recognized increasingly. The need for detailed and intensive training in this area is obvious. How shall this training be carried out?

There is a certain logical order in the steps of training which seem to us to be essentially these: Principles and theory, demonstrations, preliminary laboratory experience (in the sense of practice by students on each other and on any other available subjects), practicums in the form of clerkships (organized short periods of part-time training at established field centers) and internships (organized, full-time, extended periods of training at established field centers).

The devices with which the student should become acquainted and in which he should attain proficiency are many and of varying degrees of difficulty. Increasing experience with students in this field convinces us, however, that before actually beginning to work on diagnostic devices the student should have a preliminary and fairly extensive period of training devoted to naturalistic observation and description, procedures on which these devices are fundamentally based. Because so much of clinical psychology (and psychiatry) depends on the description of the complexities of behavior, we would recommend that a considerable portion of the time to be set aside for diagnostic devices in the first year be spent rather in training students in careful observation and report. For this purpose one-way screens, paired observers, and recording devices of both sound and visual types, should be used in settings where individuals and groups are under observation in free and con-

trolled situations. Constant checking of observer's reports against each other, against supervisor's observations, and against the mechanical devices should be standard practice. It is important that a healthy respect for careful observation and report be developed in students who are going to work in a field where a good share of the time the major instrument, in both respects, is the observer himself. With regard to reporting, both in this connection and in connection with diagnostic study, strictness and insistence on high standards of succinctness and accurate terminology are essential. A further argument for early training in observation is suggested by a reading of Flexner (5, p. 253), who, quoting Wenkebach's statement, "Das Wissen verdrängt das Sehen," points out the dangers which come from the early acquisition of technical terms and how frequently such knowledge serves as a barrier to accurate observation of the conditions with which the student is concerned.

Concurrent with the observational field work of the first year might come a broad survey course in clinical psychology whose purpose it would be to provide the student with a perspective of the whole field of clinical psychology. This would include a consideration of the varieties of duties and responsibilities which may be involved in different settings in relation to clients, other professions, and the public. Such a course might be followed by instruction in the technique of taking histories and interviewing, at least in part given under the guidance of experienced social workers and psychiatrists. The preparation of an autobiography during this period is also to be recommended.

After this preliminary background, which has emphasized molar techniques and has provided acquaintance with some clinical material, there follows naturally a systematic course in the theory and practice of diagnostics. Such a course should begin with a consideration of the theory and philosophy of diagnostics; it should provide an understanding of the place of diagnostic procedures in systematic psychology, its relationship to other forms of directed acquisition of knowledge such as naturalistic observation and experiment, its history in detail, and its strengths and weaknesses as a scientific method and as an applied technique. A presentation of the theory and practice of test construction might follow.

The student should then acquire an extensive, if superficial, acquaintance with the wide variety of test and other diagnostic devices: sensory and motor; intelligence: verbal and performance, individual and group; educational and vocational guidance; personality: objective, projective, and situational; and some general notions about their applicability, roughly in the stated order. He should, of course, have a more intensive acquaintance with the selected devices generally used in clinical settings. Whereas he may acquire knowledge of the former from general test survey courses, his knowledge of the latter should be acquired from specialized courses devoted to these techniques. In this connection, the faculty must resist pressure from the students who will put up considerable clamor to be permitted to do projective testing (just as some press for therapy) before they have the necessary relevant clinical and theoretical background for the proper use of these complex techniques. Knowledge about tests should not be derived from didactic teaching alone nor from occasional practice on fellow-students tacked on to the course. Practicums and clerkships, as has repeatedly been emphasized, must be recognized as essential and integral parts of the university training, and periods of practice with subjects in clinical settings must be provided. The general emphasis during the university period should, however, not be on too intensive practice in any one device nor with any one type of subject; rather, it should be directed toward getting across to the student the "feel" of contact with a variety of types of patients as well as the "feel" of a variety of types of test procedures. With this in mind the university should have available many neighboring clinical centers for clerkships, such as schools, child guidance units, schools for the feebleminded, psychopathic and other psychiatric hospitals, mental hygiene clinics, general medical and surgical hospitals, educational and sensory-motor disability clinics, prisons, industrial units and vocational guidance centers. Each student should rotate among at least four of these.

During the internship or externship it is inevitable, and in fact desirable, that a certain amount of the activity of the previous years is duplicated. The student should at the time he commences the internship have, besides a general background in basic general and dynamic psychology, a broad ac-

quaintance with test techniques and an elementary appreciation of their application. He has now come to a setting whose major contribution is to throw him into direct, constant, and intensive contact with human material—a setting in which he can apply both his theoretical knowledge and his beginning skills.

In this environment, where the emphasis is on the individual patient, rather than the problem or the technique, there are certain goals related to test procedures which one expects the student will reach. It is expected that besides acquiring skill, through repeated practice, in the administration and understanding of a wide variety of tests, he will learn when tests are called for and when they are not, what tests and combinations of tests are required in specific problems, and that he will learn their weaknesses as well as their strengths. Besides acquiring a sensitivity to the diagnostic and prognostic aspects of his test findings one hopes that he will become sensitive to their therapeutic implications as well. In fact, there should be an effort to develop in him a "therapeutic attitude" towards his diagnostic work; an attitude that involves learning to avoid probing and carrying out misplaced therapy; an attitude that involves leaving the patient the better rather than the worse for the experience—this without violating the controls or the spirit of good diagnostic procedure. It is expected that he will acquire some sense of balance between the extremes of rigorous pedantic exactness and sloppy guessing, that he will recognize that different problems lend themselves to differing degree of control, and that there are times and stages of development when a rough negative correlation appears to obtain between psychological meaningfulness and degree of control. It is to be hoped that he will learn that what is important, while working always for reasonably greater control in the clinical setting, is to be honest about the degree of control obtained at the particular time, to admit that one is ignorant or merely hypothesizing when such is the case. His supervisors should strive to have him attain enough security about presenting tentative conclusions so that he does not escape into meaningless profundities or into exactness about the insignificant when he is overcome by the complexities and the difficulties of the significant.

These courses are suggested for the diagnostic series:

1. Observational techniques and reporting.
2. Survey of clinical psychology.
3. Methods of case study, case analysis and interviewing.
4. Theory and practice of psychological diagnostics:
   a. Theory of testing and test construction
   b. Verbal "intelligence" tests
   c. Non-verbal ability tests
   d. Tests of sensory and perceptual function
   e. Tests of motor function and motor skill
   f. Educational achievement tests
   g. Vocational tests
   h. Clinical tests of psychological deficit, aphasia, conceptualization, etc.
   i. Projective and other personality procedures
   j. Clinical analysis and integration of diagnostic devices.

D. *Therapy.* It is our thesis that no clinical psychologist can be considered adequately trained unless he has had sound training in psychotherapy.[4] The social need for the increase of available therapists is great. Clinical psychologists are being called upon to help meet this need, as well as the greater research need, and we anticipate that many will devote a part of their time to some form of psychotherapy. Our strong conviction about the need for therapeutic experience grows out of the recognition that therapeutic contact with patients provides an experience which cannot be duplicated by any other type of relationship for the intensity and the detail with which it reveals motivational complexities. A person who is called upon to do diagnostic or general research work in the field of clinical psychology is seriously handicapped without such a background; a person who is called upon to do research in therapy (a field to which psychologists of the future must, for various reasons, devote themselves prominently) cannot work at all without such a background.

Many important problems of an inter-disciplinary, social, and legal nature are raised by such a program,

[4] Psychotherapy is a process involving interpersonal relationships between a therapist and one or more patients or clients by which the former employs psychological methods based on systematic knowledge of the human personality in attempting to improve the mental health of the latter.

questions which are not pertinent to the discussion here. There is no reason, however, why these cannot be taken care of eventually by the various Committees and Conferences concerned with the problem. We feel that members of other groups, such as psychiatrists, psychoanalysts, and social workers, who have been concerned predominantly with problems of therapy should be called upon, to as great an extent as possible, to take an important role in the teaching of the clinical psychologist. A by-product of this association could not help but be a reduction of some of the difficulties raised by the mentioned problems.

Because of the greater complexity and inexactness of the therapeutic process it would seem reasonable that study in this area begin not before the second year. The work might be introduced by lecture and discussion courses on theory and methods, followed by practicums on simpler therapeutic techniques and on problems such as those which are involved in remedial work and guidance. Therapeutic activity of a more advanced (though still simple) kind should perhaps be left for the internship and fourth years of the program. During the internship, the student should be in an institution where detailed and close supervision is available. In the fourth year he has gained sufficiently in background, maturity, and appreciation of his responsibilities to the client, and to his own and other professions. Really advanced training in therapy is, with few exceptions, a problem of the post-doctoral period which requires considerable thought devoted to it.

The courses which should be included are:

1. Therapeutic theory and methods—Lectures and discussion. Introductory course in therapy and counseling; methods and techniques; evaluation of results. There should be considerable emphasis on different points of view in therapy and on common factors in the various forms of therapy.

2. Remedial aspects of special disabilities—Lectures and systematic supervised practice.

3. Techniques of guidance and counseling—Lectures and systematic practice under supervision in individual personality guidance and counseling of minor problems.

4. Personality therapy—Detailed consideration of case material in seminars; carefully supervised practice.

5. Techniques of group therapy—Lectures, systematic participation, and supervised practice.

E. *Research Methods.* Because of the academic background of psychology, a natural development has been that of all the disciplines in the mental hygiene field it is psychology which has been most concerned with research. It is important that this interest in research on the part of psychology continue, for as one surveys the scene the likelihood that the major burden of research will fall on the psychologist becomes clearer. If he permits himself to be drawn off into private therapeutic practice as has the psychiatrist, or into institutional therapeutic work as has the social worker, the outlook for research is dim in a field where the need is enormous. As has already been indicated, if a social need for therapy exists, then the need for research is even greater. The fact that there is not equal pressure for the latter is mainly due to the excusable but still short-sighted outlook of the public. The universities, with their more far-sighted orientation, have a serious responsibility to develop research interests and abilities in the clinical psychologists they train. The interest should be in research on the laws of human behavior primarily and on technical devices and therapy secondarily. Throughout the course of training, research attitudes and problems should permeate all aspects of the program, in the diagnostic courses and in therapy, as well as in the courses in general psychology and psychodynamics. The emphasis on personality theory, already mentioned, is closely related and should serve as further support to this point of view. Only from a concentrated attempt to build up such an attitude can we expect to draw from our training programs a substantial number of psychologists who will be interested in devoting themselves primarily to research, and a further number who will devote at least part of their time to such activity.

The courses in this area should include:

1. Experimental psychology—Conference and laboratory course of a basic kind in experimental techniques, devoted mainly to the consideration of the more meaningful problems in general psychology, e.g., learning, reaction mechanisms, work activity, etc. Consideration should be given to variability of response—to the significance of the extremes of the distribution as well as to the modal and typical

response—and to the clinical implications of these general problems.

2. Advanced statistics and quantitative methods in psychology and psychopathology.

3. Research in dynamic psychology—Conference and laboratory course which considers the theory and design of experiments in personality characteristics and dynamics; application of experimental and other research methods to the problems in the clinical field.

4. Dissertation—Preliminary work on the dissertation including the setting of the problem, preparatory reading, and the outlining of the project in detail during the second year. Actual experimental work on the dissertation carried out during the third (internship) year under joint supervision of university and field center. Final work on the dissertation during the fourth year.

F. *Related Disciplines.* Because of the problems with which he is constantly faced there is no psychologist who needs a broader background than the clinical psychologist. He works in a setting with medical specialists of many kinds: psychiatrists, physiologists, neurologists, to mention the most prominent, and with representatives of other disciplines such as social workers and educators with all of whom he has the closest contacts. On the one hand, his work may have specific physiological implications, on the other, broad educational and social aspects. He cannot be narrow; he must be able to meet his colleagues on common ground and at the same time see what the remoter implications of his findings are. That an adequate training program could be organized which does not include in it some of the background which such an assignment calls for is inconceivable. It has already been suggested that some of this background should have been acquired during the undergraduate period. But the greater part must necessarily come during the graduate period. Here, too, representatives from other disciplines should be used as much as possible in the training; in fact, it cannot be carried out without them.

The program should include:

1. Physiological sciences—Lectures and demonstrations. Selected aspects of physiology and anatomy: especially neurophysiology, neuroanatomy, autonomic nervous system, endocrinology, etc.

2. Introduction to clinical medicine—Lectures. Introductory course in clinical medicine to acquaint the psychologist with the major characteristics of the clinical pictures of various diseases and with technical medical procedures which he will hear about in the settings where he works. Special attention should be given to those diseases which today are usually referred to as psychosomatic.

3. Social organization and social pathology. Lectures and field visits. A course to acquaint the psychologist with social structure; the pathological aspects of this structure as seen in crime, poverty, etc., and the agencies set up to take care of these. The major part of this course could most effectively be given by psychiatrically oriented social workers rather than sociologists.

4. Influence of culture on personality—Lectures on cultural anthropology's contribution to the understanding of personality.

We might summarize what has been presented in the preceding section, which covered the content of the program according to areas, by a brief statement of the content according to year levels.

The primary purpose of the first year of study is to lay the systematic foundation of knowledge of psychology, to achieve some degree of acquaintance with the physiological and other sciences needed for professional clinical work, and to train the student in good observational technique.

The program of the second year of graduate work is directed mainly at providing the student with the necessary background in the experimental, diagnostic, and therapeutic approaches to the problems of clinical psychology. Although a certain amount of teaching may still be carried on in the form of lectures, the major emphasis is on direct contact with patients, clients, or other subjects, either in the diagnostic or in the experimental setting. Practicum courses and clerkships in different clinical settings are essential element of this year's program.

The third year consists of an internship whose content is discussed in fuller detail in a later section. The Committee believes that the third year spent in an internship and the fourth in a final year at the university is the most desirable arrangement, although other patterns should be experimented with. The advantages of this proposal are many: (1) The student is enabled to complete the analytic and final work on his dissertation at the university. (2) It permits the final integration of the experiences

acquired during the internship with the more theoretical principles emphasized by the university, and emphasizes the unity of the course of training. Otherwise the internship may be considered as a mere appendage. (3) The return of graduate students with internship background to the university should have some influence in integrating the kind of training provided by the university and the internship center. It might also serve as a reciprocating educational influence upon the nonclinical university group, both students and instructors. (4) The student is placed geographically close to the agency which already has an established placement service and is therefore in a better position to aid him in the consideration of employment opportunities.

The program of the fourth year should be relatively elastic and could include most of the following:

1. Final work on dissertation.
2. Cross-discipline seminars (attended by representatives of psychology, anthropology, sociology, social work, psychiatry, etc.) that devote themselves to the discussion of psychology's relation to the other sciences concerned with the adjustment problems of the individual and the group. The purpose of these seminars should be to integrate the major principles of previous study and to point out the broader implications of the course of instruction for the personal and social scenes.
3. Seminar on professional problems—standards, ethics, etc.
4. Additional courses in psychology as needed to round out the individual student's program.
5. Additional courses in related fields as needed to round out the individual student's program.
6. Advanced therapeutic work, if indicated.
7. A program of self-evaluation, if indicated. (See later discussion of the problem of personal analysis.)

SPECIAL PROBLEMS

Since certain aspects of the program raise special questions they are considered in this section. The first of these is the internship

Internship. What are the aims of a psychological internship?[5] Underlying all of its aims is the principle now recognized for the whole clinical psychology program, but particularly true for the internship, namely, that the knowledge essential to the practice of clinical psychology cannot be obtained solely from books, lectures, or any other devices which merely provide information about people or about ways of studying them. Rather, extensive and intensive experience *with* people is held to be essential if the student is to acquire a proper perspective and the ability to apply effectively the scientific facts and techniques which he has acquired in the academic setting. It should be pointed out that the internship is not a "repair shop" in which the failures of the academic center are taken care of. The university must adequately carry out its function of providing the necessary training in tool subjects so that the student may take the fullest advantage of what the internship is set up primarily to provide, namely, material on which to use these tools. Before he can become either a competent practitioner or investigator, the student must become sensitive to the many relevant aspects of the real person under actual study and learn to view him as an individual. In this process, he also learns to view himself as an essential instrument in the study of other persons. Because of the recognition of these needs, clinical clerkships and internships, the only devices that can accomplish these goals adequately, have been made integral parts of the program.

The major contribution of the internship is the provision of extended practical experience of gradually increasing complexity under close and competent supervision. The building up of an apperceptive mass of experience which gives concrete meaning to general principles can be attained only by volume and variety of contact with actual clinical problems in association with other disciplines. The program should provide the student with a broad base for later specialization by throwing him into full-time contact with human clinical material, contact of a much more intensive kind than he can possibly achieve during the clinical clerkships of the second year. This aspect of the instruction gains its value from being organized around the case material to be found in the institution, that is, the person rather than the condition is made the center of interest. Not only is the person seen in cross-section but it is possible to follow him longitudinally,

[5] The term internship (residence appointment) is used in this report interchangeably with externship (non-residence appointment).

either as the psychological processes develop and unfold, or as they may have been previously conditioned.

The content of the internship program comprises two major categories of activity: that involving contact with the patients or clients and that involving the acquisition of experience in the administrative sphere.

Contact with clients is of two types: *direct*—the acquisition of information from the patient by the investigator himself; *indirect*—the acquisition of information from and about the patient through other investigators and sources.

In direct contact with clients the main avenues of approach are those concerned with diagnosis and those concerned with disposition. Each of these requires separate consideration.

A most important aspect of the education of the intern is the further instruction he receives in the use of *diagnostic procedures*, the procedures directed at acquiring knowledge about the origin and nature of the patient's condition. Under this heading are included a great variety of techniques of different levels of objectivity and degrees of complexity among which history-taking, interviewing, clinical psychometrics and analytic and projective techniques are of particular importance.

An equally important aspect of his direct contact with clients is that involving *disposition:* what is to be done about the presented problem on the basis of the findings obtained through the use of the various diagnostic procedures. The worker himself may be directly concerned with disposition or he may serve in the role of consultant. In the former, the direct execution of the implications of the diagnosis may be at a technical aid level, at a therapeutic aid level, or at a quite advanced professional therapeutic level. In the latter instance, when the intern acts as a consultant, the recommendations which frequently are part of a much broader set of recommendations deriving from studies made by several disciplines, are carried out by another person. In such a case the intern should have the opportunity to find out how effective are the actions taken with respect to the recommendations he has made, that is, he should at least be able to follow the case through written or oral reports. One of the advantages of the full-time internship is that the student is in a position to follow personally the evaluation and disposition made of the patient whom he has studied. A major disadvantage of part-time appointments is the likelihood of lapses in this follow-up process—the experience in too large a part consists of a succession of unclosed gestalten.

The direct contact with subjects just discussed lends itself to two different types of approach, each with a different end in view. The first is the *service* approach, that is, the study of the patient with the aim of solving his particular problem without regard for the general implications involved. Most of the work which is done by the intern is at this level. The second is the *research* approach, that is, the study of the patient not only for himself but for the general implications which his particular problem presents to psychology and psychopathology. This may be based either on a very thorough study of the client as an individual case or as a unit in a series of cases. Research experience, as has been indicated, is an essential part of the background of the clinical psychologist and a considerable part of the intern's time—perhaps up to one-third—should be devoted to the study of a problem on which he can accumulate a body of data during the course of the year's internship. This material, as suggested earlier, may very well be used for a dissertation. One of the most valuable contributions of the internship is the repeated opportunity which it affords for intensive team work, for intimate association with members of related disciplines on specific cases and problems. Such practical opportunities for coordinated activity and thinking are indispensable for proper training.

In addition to these direct contacts with clients a considerable part of the instruction which the student receives involves only *indirect* contact with them, that is, is about patients with whom he himself has had no direct association. This includes experience of three kinds: (1) individual—about a particular subject; (2) general—about classes of subjects; and (3) technical—about methods used with such subjects.

Indirect contacts with *individual* patients may arise either within the setting of the institution's psychology department or outside the department. In the former are included conferences and department staff meetings which consider the diagnostic or therapeutic aspects of cases carried by other members of the department. In this type of re-

lationship with clients the extra-departmental contributions are usually the more extensive. A major contribution to the student's education is the knowledge which he acquires from regular attendance at the institution staff meetings which consider patients for initial orientation, for diagnosis, for disposition, or for special pedagogic purposes. At these, the student has the opportunity to become acquainted with the contribution made towards the understanding of a case by other disciplines, such as psychiatry, social work, pediatrics, education, occupational therapy, or nursing, and the manner in which the various contributions integrate with the psychological findings.

Contact of the *general* kind, that is, about general problems and classes of subjects, is obtained by the intern both in and out of the institutional psychology department through lectures, courses, and seminars in one or more fields, such as psychiatry, psychosomatics, neurophysiology, experimental psychopathology, and re-education and rehabilitation, and in the approaches to the problems of clinical psychology from the standpoints of particular disciplines, namely, social work, neurology, psychiatry, internal medicine, pediatrics, education, pastoral work. The student thus continues his "academic" education in the setting of concrete material and personal day-by-day meaningful illustration. This education has the further advantage of being carried on without the interruptions which shifts back and forth in geographical setting entail. During the internship year opportunity is afforded for extensive seminar study of advanced techniques in therapy, and advanced work in diagnosis with such devices as the Rorschach and the Thematic Apperception Test, techniques about which only the first essentials are actually learned in the first courses which are taken at the university.

Another aspect of this indirect contact with patients is the instruction which may be provided in sessions which consider new *technical* procedures. Here, too, the emphasis should be on the exemplification of the techniques by case material from the clinical setting.

An important point which administrators of internship centers must keep in mind is the necessity for constantly providing experience with normal material. The institutional personnel, by serving as subjects in psychological experiments and tests, frequently offers a rich source in this respect.

There is one other type of experience which is of some importance. We refer to the *administrative* aspects of department activity, including the mechanics of relationships with colleagues, superiors, members of other disciplines, and the institutional administration. At the start of the course of internship the supervision should be close and the supervisor should assure himself of the ability of the student to handle even the simplest problems or procedures. As the student shows increasing competence, the supervision should be proportionately reduced and greater responsibility placed on the students to supervise each other with only a final check by the supervisor. The latter should, however, always be available for consultation. The importance of competent supervision cannot be overemphasized and any institution which accepts the responsibility of providing an internship program must recognize this as one of its important tasks. In the intra-departmental sphere each intern should carry some of the responsibility for departmental functions. This may be in the nature of assisting in the supervision of other interns (rotated regularly among the group), the teaching of students who are serving clinical clerkships, and the care of departmental records of patients.

A fundamental purpose which must lie behind the process of instruction of the intern is the gradual development in him, through judicious supervision, of a sense of a responsibility and self-reliance in handling clinical problems. The program as a whole should be organized to provide the student with increasing responsibilities commensurate with his growth in the ability to accept these. Such a task requires constant knowledge by the supervisor of the state of the student's progress through active contact; absentee, routinized, or overloaded supervision cannot achieve this goal. The optimum number of students that a supervisor can handle depends on the nature of his other responsibilities; in general, five is about right. As soon as possible, the student should become a productive staff member, one who contributes practically to the service activities of the department. Even if his contribution is limited, as it necessarily is at first, the psychological effect on the student in giving him a sense of responsibility and a feeling of usefulness is

great. Such contributions also make the administrators of internship centers more receptive to the establishment and maintenance of internship opportunities.

Another important aspect of the problem of the mechanics of instruction is the way in which the internship is organized. A full consideration of the various types (concurrent as opposed to block or consecutive, straight as opposed to rotating) leaves the Committee with the judgment that the block system, in which a full year is devoted solely to the work at the institution, especially that involving residence there, is to be preferred. As suggested earlier other forms should, however, be experimented with. For the present, too, it seems preferable to concentrate on the straight internship, if for no other reason than because of the much greater simplicity of its organizational aspects as compared with the rotating type. (In the latter the problem is complicated because the student has to move at intervals from institution to institution.) In the medical field rotation has in many instances been found to result in a "smattering of knowledge." This, as well as many other important aspects of the problem, is discussed in some detail in the Subcommittee Report (*4*), and should be referred to.

What kind of institution is to be preferred for the internship—child or adult, state or private, mental disease or mental deficiency, out-patient or in-patient? Careful consideration of the problem impresses the Committee that it is not the type of institution which should be the major determining factor but rather the nature of the particular institution. "Good" institutions, that is, those providing opportunities for diagnosis, research, and therapy with a reasonably varied population under adequate supervision, of any type are better than poor institutions of what might be considered a favored type.

These general goals can of course most easily be achieved in large training centers where various disciplines are represented. Too much training in psychology has gone on in starved environments and a change in this respect is long overdue. A major characteristic of the "rich" environment is that concurrent training is provided in a variety of related disciplines, such as psychiatry, social work, nursing and occupational therapy, as well as in psychology. For the latter, it is most important that at least the first two be represented. Such a setting provides the possibility for students of several disciplines to work jointly, under supervision, on common cases. Some of the most profitable learning about the case itself, about the relative and complementary contributions of the different disciplines, and about ways of working together effectively for the benefit of the client comes from these contacts. Besides the appreciation of the complexity and many-sidedness of the problem which comes from the different philosophies and points of view which are ordinarily represented, there is considerable learning by example from the other disciplines. Instances of this are the appreciation of rigorous experimentation that is derived from the physiologist and biochemist, the appreciation of the importance of meaningfulness as represented in the systematic viewpoint of the psychoanalyst towards molar data, and the sensitivity to the practical social implications of a problem that comes from the social worker.

Optional Courses. Although the four-year program should have a common core for all those training in clinical psychology, and should in general be similar for all students in the program at a particular university, it is important that a certain degree of option for special courses be permitted. This can ordinarily be worked out most satisfactorily in the fourth year, but should be possible at other points in the program. One may expect that the concept of what constitutes desirable clinical training programs will change with the years and it is best to permit students, through elective courses, to do a certain amount of experimenting with their programs as one aspect of this search for the most satisfactory program.

Dissertation. Because of our interest in developing a research-oriented professional person it is quite important to retain the feature of the dissertation as part of the requirements for the doctorate. However, universities will have to rethink the whole question of the nature of the dissertation and its proper function, especially as it relates to the present type of program. With respect to its place in the proposed program, advantage should be taken of the opportunity provided by the internship to carry out a research project in the field of major interest to the student, both because of this interest and because it is important for him to obtain research

experience in the clinical field. The student can learn as much about the nature and rigors of methodology and make an equally significant contribution to knowledge in working on some problem in personality or in psychopathology as he can in the more conventional fields. Although a dissertation on some aspect of personality which is based on normal subjects in the university laboratory should of course be acceptable, the Committee feels that preference should be given to projects involving clinical material since the student must receive as much training as possible in research with such material. The present program is so organized that research on clinical material could probably be carried out most economically in time if the internship period were utilized for this purpose. In the ordinary course of events, the student would, during his second year, do whatever preliminary work was necessary on his dissertation: he would select the problem with the aid of the faculty and the supervisor at the prospective internship center, and draw up a project outline. If preliminary experimentation is necessary it might be possible to carry this out at the university or at one of the clerkship centers. During the internship year, the student would collect the data for the dissertation. Supervision of his project should continue a joint responsibility of the university and the field training center. When the student returns to the university for his fourth year of work, he would be in a position to do the final analytic work and writing.

It is our hope that as a result of the more extensive and careful selective devices which this program is advocating, the dissertation will become much less of a major hurdle than it has heretofore been. As in professional schools, the student should by the end of the second year be so certain of having been carefully screened and of having met the requirements as to capacity and achievement, that, given conscientious attention to the balance of his program, there should be little doubt about his completing the course. The development of such an atmosphere would do a great deal to reduce the anxiety with which the latter part of the PhD program is so heavily laden, an anxiety which is largely created by the multiple and generally illogical uncertainties connected with the dissertation. If such an atmosphere can be developed the productivity of students during this period would certainly become greater.

Integration of Academic and Field Program. After what has already been said in different sections of this report it is unnecessary to discuss further the importance of integrating the two parts of the program. The techniques of implementation, however, require additional consideration. The problem of integration arises with respect to three aspects: (1) content, (2) supervision, and (3) accrediting and certification.

For the program to be most effective the content provided by the two teaching centers must be well integrated. In this respect, faculty members have in the past been quite lax. They have left too much to the student the task of correlating and integrating the material in the variety of courses which he has taken at the university. The integration of university and field center activities has been neglected even more. If training is to be optimally effective, strenuous effort will have to be directed at correcting the situation. In order to achieve such integration the whole group must become essentially *one* faculty. Arrangements for reciprocal visits and conferences between the staffs should be made to discuss such problems as the points of view to be emphasized, the techniques of teaching, and the avoidance of overlap. It is most important for the instructors at each place to know the general content of the teaching at the other. Such mutual acquaintance would go far towards making easier for the student the transition to the internship center and back to the university.

In the matter of supervision an integrated program must also be achieved. The supervisor at the internship center must obviously be held responsible for the major part of the student's activity. If the candidate is to use his available research time at the institution for work on his dissertation, a very close relationship between supervisors and agreement as to the division of supervisory responsibilities must be achieved by the two groups. The appointment by the university of several of its instructors, on a rotating basis, to act as field supervisors should be considered. It would be their responsibility to hold scheduled conferences with the interns in order to maintain contact with them and help supervise their dissertations.

All of the aspects requiring integration point to

the obvious need for a combined responsibility in setting and maintaining standards. Such unification can only be achieved by accepting the internship center as an institution of comparable status with the university and in some respects an integral part of it. This can be achieved by interchange of personnel, joint conferences, and by interchange of student visits. There is no better way of achieving integration than through an interchange of staffs. The teaching staff of the university should be encouraged to spend summers or other periods at the institution on guest appointments. The staff of the institution should be given temporary full-time or permanent part-time appointments at the university on a regular faculty or lectureship basis. The latter arrangement is generally quite practicable and does not become too involved in the problems of university administration.

Self-evaluation. As psychologists become more involved in the clinical field, they become increasingly impressed with the importance of the observer as instrument. An important aspect of this problem, one which arises particularly in dealing with motivational questions, is the degree to which one's own biases, affects, and problems, frequently only different from the patient's in intensity, color the material provided by the patient. It has become obvious to those working in the clinical field that some kind of control of this source of error is necessary. Psychiatrists and social workers, from their more extended experience with this type of material, have long accepted the principle of the need for intensive self-evaluation as a prerequisite for their work, especially their therapeutic work.

Psychologists, in our opinion, must come around to the acceptance of some kind of intensive self-evaluation as an essential part of the training of the clinical psychologist. We are not prepared to recommend any special form of such procedure, although some of us believe that whenever possible this should take the form of psychoanalysis because of its relative completeness. Others of us believe that shorter methods of self-evaluation, because they may be less time-consuming and less indoctrinating, are preferable. Whatever the form, training should include detailed self-examination under the competent guidance of persons relatively free from dogma who have an interest in psychological theory as well as in therapy.

Psychologists can adopt from social work practice a procedure that has been found effective in achieving at least partial self-knowledge. We refer to their use of detailed case supervision of students. As a result of almost daily contacts with the student on his own cases a relationship is established between the sensitive supervisor and student which may indirectly have therapeutic benefits. Such a setting makes it possible for the student to examine critically his own behavior and interpretations as they grow out of his handling of case material and provides an opportunity for considerable personal growth. The profit from these personal contacts is increased when backed up by classroom discussion of cases on a less personal motivational basis.

Administrators of training programs should make an effort to promote such supervisory practices and canvass the possibilities for the more intensive type of self-evaluative experience in their own regions. Students, during the last part of their doctoral training, or immediately after this training, should be encouraged to undertake such a program.

Professional Responsibilities. No group can become a profession overnight, a fact which clinical psychology is in the process of discovering. What really counts in the making of a profession—professional ideals and practices—cannot (un)fortunately be taught in courses. Proper technical training, professional certification and state certification, of course, play important roles. More important, however, are identification with a group having high ideals, and constant association in the actual work situation with persons having professional goals. It is in the work relationship that the student can learn to think of himself as a professional person. It is here that the student can gain an appreciation of how people meet such problems as maladjustment, illness, and handicaps and in this context gain a feeling of responsibility about his work because he understands that his findings really make a difference in what happens to a particular individual and his family. It is here that he learns to carry, in addition to this responsibility for the individual, the broader social one which transcends the need of the individual patient. It is in this setting, too, that another important aspect of professional training, his relationship with other professions, is constantly brought to his attention. He learns the techniques and importance of the

group attack on problems: how best to work with other professional groups for the benefit of the individual client and the frequent necessity for identifying himself with a group even broader than his own professional group, namely, the "team."

If the student, after having achieved strong identification with psychology, learns to divest himself of this identification in order to become part of larger wholes for the benefit of a patient or a group, then he may be said to have achieved true professional growth. It is in this setting that ethical problems constantly arise and that the greatest learning in dealing with them naturally occurs. When this opportunity for "field" learning has been afforded, then "talk" learning becomes profitable. Seminars on professional and ethical professional problems have a contribution to make and should generally be made available during the fourth year. In these courses the ethical problems that arise from relationships with clients, and those that arise from relationships with other psychologists and with other professions and the public should be considered, especially as they develop from concrete situations.

Student Relationships. We have stressed, in one context or another, the importance of the development of a sense of responsibility. Such a sense comes only in proportion to the opportunities for practice afforded a person. Besides those we have already discussed, another area where students may exercise responsibility is in helping to shape the program in which they are enrolled. Such thinking about professional problems, whether group or individual, should be encouraged, as should the organization of colloquia which the students themselves administer. The opportunity to express themselves freely on policy will insure reduction in the dissatisfactions and irritations which naturally arise in any program.

Another aspect of this problem has to do with the individual problems of the students—whether personal, or connected with the program. Provision should be made for adequate conferences on such problems when they arise. In fact, each student should have an active advisor whose responsibility it would be to keep track of the student's progress and who would be readily available to consider his individual problems.

Evaluation of Accomplishment. A problem which necessarily follows the organization of a program such as the one outlined is that of accrediting and certification, that is, the official recognition of the adequacy of those who take part in it—the student, the university, the field center.

For the student, at the various levels of individual advancement, some appropriate symbols of achievement seem necessary. The following are suggested:

1. Doctoral degree following the four-year course of professional preparation. Although there are some professional groups, notably the legal, which practice on the basis of a bachelor's degree, there are various considerations which make it doubtful if anything less than a doctoral degree would be satisfactory for the practice of clinical psychology.

2. Membership in the special division of the professional association of the group, the American Psychological Association's Division of Clinical and Abnormal Psychology. The first grade of active membership, Associateship, as recommended by the Policy and Planning Board (*2*), would come for participants in this program, with the attainment of the doctorate; the second, Fellowship, with an additional five years of acceptable experience—essentially at the level of diplomate as discussed later.

3. After a year's post-doctoral experience would come state certification as recommended in the Policy and Planning Board Report (*2*). Closely linked with the problem of study beyond the doctoral degree is that resulting from the establishment of the American Board of Examiners in Professional Psychology (*3*). This Board has as its function the certification of candidates who after five years of actual experience, three years of which have been spent in recognized training centers, have passed examinations in stated aspects of the field of clinical psychology. (The nature of this advanced residency type of training requires special consideration and is not directly pertinent to the present problem. We hope to consider the matter in a later report.) Diplomas of the Board would serve as evidence of competence in the specialty of clinical psychology. Such a program emphasizes the important point that the attainment of the doctoral degree is only a step in the process of professional education, an education which continues through to specialist rating and beyond; in fact, throughout professional life.

Training universities and field centers as well as students must be evaluated. The universities should be evaluated according to their ability to meet the requirements set forth by this program. (Our Committee has been charged with such an evaluation and hopes to be able to commence this task shortly.) Not only the formal meeting of standards with respect to the courses given but the actual quality of the courses, as it relates both to content and instruction, should be carefully scrutinized.

The field centers should be given the same careful scrutiny as the schools. Standards as to content, quality, and amount of supervision, facilities (personnel, clinical, library, teaching), and living arrangements, should all be carefully set up and used in the evaluation. Since it is likely that the degree of expansion of clinical psychological training will depend to a great extent upon the number of really adequate internship centers which are available, considerable effort should be directed by universities to encouraging their development.

RECOMMENDATIONS

The Committee on Training in Clinical Psychology believes that the program outlined in the present report, if effectively carried out, should provide the basic background for clinical psychologists who will undertake both teaching and practice functions in the diagnostic, therapeutic, and research aspects of the field. This program, it believes, should also prepare persons who can eventually contribute to its preventive aspects, a goal towards which more and more of our future efforts must be directed.

The Committee on Training in Clinical Psychology therefore recommends to the Council of Representatives:

1. That the present report be endorsed.
2. That the program here outlined be presented to the universities offering doctoral training in clinical psychology as a recommended program.
3. That the report be recommended for publication in The American Psychologist.

Respectfully submitted,

ERNEST R. HILGARD
E. LOWELL KELLY
BERTHA LUCKEY
R. NEVITT SANFORD
LAURANCE F. SHAFFER
DAVID SHAKOW, *Chairman*

REFERENCES

1. American Association for Applied Psychology. Committee on Training in Clinical (Applied) Psychology. (B. V. Moore, Chairman.) Proposed program of professional training in clinical psychology. *J. consult. Psychol.*, 1943, **7**, 23–26.
2. American Psychological Association. Annual Report of the Policy and Planning Board: 1947. *Amer. Psychologist*, 1947, **2**, 191–198.
3. American Psychological Association: Committee on the American Board of Examiners in Professional Psychology: Report. *Amer. Psychologist*, 1946, **1**, 510–517.
4. American Psychological Association and American Association for Applied Psychology Committee on Graduate and Professional Training: Subcommittee report on graduate internship training in psychology. (D. Shakow, Chairman.) *J. consult. Psychol.*, 1945, **9**, 243–266.
5. FLEXNER, A. *Medical Education*. New York: Macmillan, 1925. Pp. ix + 334.
6. GREGG, A. (Chairman.) The place of psychology in an ideal university. The report of the University Commission to advise on the future of psychology at Harvard. Cambridge: Harvard University Press, 1947. Pp. 42.
7. KELLY, E. L. Research on the selection of clinical psychologists. *J. clin. Psychol.*, 1947, **3**, 39–42.
8. KUBIE, L. S. (Chairman). Training in clinical psychology. Transactions of the First Conference, March 27–28, 1947, New York, N. Y. New York: Josiah Macy, Jr. Foundation, 1947. Pp. 88.
9. MORROW, W. R. The development of psychological internship training. *J. consult. Psychol.*, 1946, **10**, 165–183.
10. SEARS, R. R. Clinical training facilities: 1947. A report from the Committee on Graduate and Professional Training. *Amer. Psychologist*, 1947, **2**, 199–205.

A MULTIPLE CUBICLE-BENCH FOR THE STUDENT LABORATORY IN PSYCOLOGY

CARL PFAFFMANN

Brown University

ONE of the major problems in designing the student psychological laboratory is to provide reasonably isolated and quiet working space for each pair of students, one acting as Experimenter and the other as Subject. Frequently it is not feasible to provide individual experimental rooms for each pair of students because of the large amount of space which this requires, particularly in this day of large student enrollments. In most of the individual experiments typical of undergraduate laboratory courses in psychology, however, the actual working space required by each pair of students can be provided by a table with a top measuring 30 inches by 30 inches. The cubicle-bench unit shown in Figure 1 provides working space of this magnitude for four pairs of students within the confines of a relatively small floor space and at the same time fulfills the requirement of semiprivacy and quiet.

The bench of the cubicle-bench shown in the figures is 30 inches high, 30 inches wide, and approximately 12 feet long. This is divided into four cubicles by transverse partitions of a heavy-weight plaster board supported by frames resting on the bench top. The partitions, 35 inches high, extend 18 inches beyond the edge of the bench on each side. The entire structure is roofed over. The surfaces of the transverse partitions and the under surface of the roofing are covered with a sound-absorbing acoustic tile, 1 inch thick Armstrong Cushiontone. Sounds originating outside are attenuated for persons seated in the cubicle; speech and other sounds originating in the cubicle are attenuated for those outside. Our construction is only partially satisfactory in this latter respect because of reverberation of the small cubicle for low frequency sound waves. The voice of the speaker in the cubicle tends to have a "boomy" quality. The particular acoustic tile employed is less efficient at the lower frequencies. Choice of the material, however, was dictated by such other considerations as appearance, availability, ease of construction, etc.

Illumination in each cubicle is provided by an electric light fixture in the ceiling of the cubicle. The light buff coloring of the acoustic tile acts as a good reflecting surface so that the whole cubicle is suffused with light. Three different electrical circuits are connected to outlets recessed in the bench top of each cubicle. By means of appropriate connectors, several kinds and combinations of electrical power may be supplied to each cubicle. A shielded cable circuit is designed to carry the electrical signal from an audio oscillator for experiments on hearing.

Under normal working conditions, the students acting as S and E face each other across the bench. The 18 inch overhang of the transverse panels screens each pair (E and S) of students from their neighbors at either side. The cubicle of these dimensions provides comfortable working space for such standard experiments as mirror drawing, finger or stylus maze, memory drum, word association, reaction time, cutaneous sensitivity, psychophysics, etc.

For auditory experiments another partition covered with acoustic tile may be inserted into each cubicle to separate the Subject from the Experimenter. The Subject is then isolated in a cubicle 32 by 28 by 35 inches. Auditory stimulation is provided by means of earphones leading into S's cubicle, but controlled by E. Communication between E and S takes place by means of a push button and signal light circuit mounted in the bench top. It was for the auditory experiments in particular that the acoustic treatment of the cubicle walls was planned. For experiments employing visual stimuli as in brightness discrimination or dark adaptation, the acoustic tile panel may be replaced by another panel of pressed wood supporting the necessary optical apparatus. The entire room may be completely "blacked out" with light-tight panels in the windows. Under these conditions students in each cubicle may carry out visual threshold determinations simultaneously under conditions of dark adaptation. Each Experimenter is provided with a flashlight giving off a dim red light so that he can make readings and other necessary manipulations. Access to the

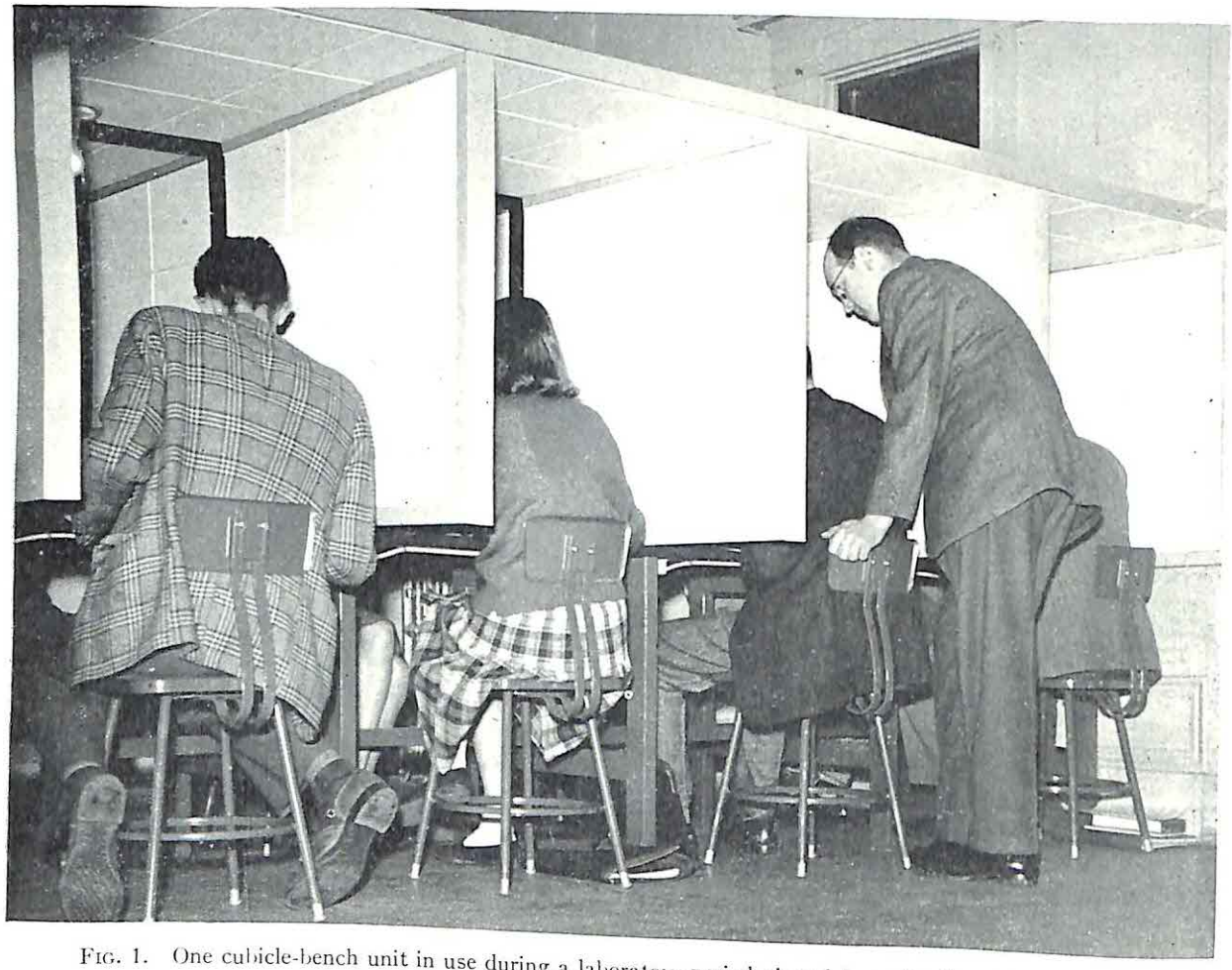


FIG. 1. One cubicle-bench unit in use during a laboratory period viewed from the Experimenters' side

room by way of a double door and vestibule prevents stray light from entering the room when the instructors enter or leave. Ventilation is provided by an electric fan and an arrangement of light-tight louvers in two windows.

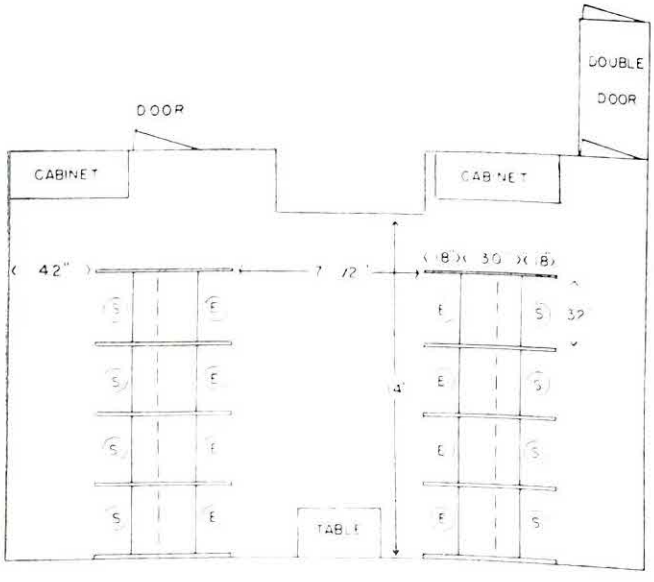


FIG. 2. Floor plan of the laboratory in which two cubicle bench units are installed

Two such bench units have been constructed and erected in a former classroom 26 feet long by 17 feet wide. The floor plan is shown in figure 2. Each bench is secured at one end to the wall for stability. There is a clearance of 42 inches between the overhang of the bench and two walls. The free space in the center of the room measures $7\frac{1}{2}$ by 14 feet (approximately). These proportions are quite adequate and even generous. The students acting as Experimenter usually sit at the sides of the benches toward the middle of the room so that they are readily accessible to the instructor in the center of the room. Eight pairs, or a total of 16 students, can be accommodated at one time. This may be compared with our former arrangement in which the same number of students was scattered about three or four rooms with more than twice the total floor space.

Across the Secretary's Desk

IT IS EASY TO BECOME A FELLOW

This discussion is addressed to those psychologists who take their division membership seriously.

It is easy to become a Fellow in a number of divisions. All you have to do is to get elected a Fellow in one division of the APA. Then half a dozen other divisions will automatically confer their titles of Fellow on you.

Although I knew that some divisions had no special requirements for membership, I did not discover just how easy it is to get a lot of titles of Fellow until this fall when I asked for lists of the members of each division. When those lists arrived, there were many discrepancies between the class of membership shown (Fellow or Associate) and the membership records of the APA. That made it necessary to write the division Secretaries to clear up the discrepancies. In several cases the Secretary of a division solved the problem by instructing me to classify anyone who was a Fellow in the APA as a Fellow in his division. The result is that a lot of people have suddenly become Fellows in fields in which they are not particularly qualified.

A major reason for establishing the divisions was to give each special interest group the right to select its own members and the right to decide who among them had earned the honor of being called a Fellow in the division. In line with this policy, there are no Fellows at large of the APA; each division chooses its own. They must be confirmed by the Council of Representatives, but the real choice lies with the divisions.

Some divisions have requirements that are either higher than or more specialized than the basic APA requirements. The Division of Clinical and Abnormal Psychology, the Di. ision of Esthetics, and the Division of Physiological and Comparative Psychology are examples. In such divisions, the title Fellow means that the holder has met the special requirements of the division.

In contrast, some divisions have no requirements of their own either for Associates or for Fellows. They accept as Associates any APA member who applies. They accept as Fellows anyone who is elected to that status by some other division or anyone who has met the minimum APA requirements. The Division of Personality and Social Psychology, the Division of General Psychology, and the Division of Educational Psychology and others are in this group. These divisions apparently do not wish to exercise the power and discrimination that the APA By-Laws give them. The result is that the title Fellow as conferred by these divisions is not an honor. All it sometimes means is that the member asked to join the division, got accepted, and then found himself classed as a Fellow because he had been elected a Fellow in some other division.

The title of Fellow is supposed to be an honor. The title Fellow in a designated specialty is supposed to mean that the holder qualifies as an expert in that specialty. If a division establishes and conscientiously imposes its own specific requirements, it should continue to have the right to designate Fellows. On the other hand, if it imposes no requirements of its own, the title it confers is meaningless. It seems to me that such divisions should not have the right to name Fellows.

As things are now, it is easy to become a Fellow in half a dozen divisions. All you have to do is to hold a job in psychology for four years after getting your PhD. Is that the way you want it?

1948 DUES

Bills for 1948 have been mailed to all members. The deadline for payment is December 31st. Unless your dues are received by that date, you may not receive all copies of the journals which are regularly sent to APA members. This year a change in procedure affecting members who are late in paying dues was approved by the Board of Directors. In the past, when a member paid late, he received all the journals to which his dues entitled him whether he wanted them or not and without any additional charge. In the future, when he pays late, he will receive the journals only if he asks for them and only if he pays the additional cost of ordering and shipping these journals from the printer.

—DAEL WOLFLE

MRS. J. P. SYMONDS
Editor, Journal of Consulting Psychology, 1937–1946

Psychological Notes and News

As a means of making it possible for more American psychologists to attend the International Congress of Psychology in Edinburgh next July 23–29, arrangements are in progress with the American Overseas Airlines which, if successful, will allow for a round-trip reduced rate by airplane on a group basis for members of the APA. Dr. Robert Burnham is handling arrangements through a well-known and reputable travel agency. It is important that early response be made since steamship and airline accommodations to Europe are already scarce. The success of these arrangements and the amount of reduction in fare will depend largely upon the number of individuals who express an early interest in participation. Applications should be made before January 1, 1948. Immediate confirmation of space can be made, but announcement of the amount of reduced fare will be made at a later date, contingent on the stated limitations. In addition to round trip reservations, arrangements can also be made for a seven to ten day (or longer) trip after the Congress to continental Europe. For information write to Dr. Robert W. Burnham, Color Control Department, Eastman Kodak Company, Kodak Park Works, Rochester 4, New York.

An International Congress on Mental Health will be held in London on August 11–21, 1948. The Congress will consist of three conferences; the main conference, sponsored by the International Committee for Mental Hygiene, will be the International Conference on Mental Hygiene. The general theme of the Conference is to be "Mental Health and World Citizenship;" the specific topic for the United States is "What has war done to the children of the world, and what can we do about it?" Representatives may also broaden the discussion to include the question, "What do we do to children that leads them as adults to make war, and what can we do about it?"

The purpose of the program is to centralize all knowledge now available on the effects of war on children, to pool all the data for study and interpretation, to provide a baseline for longitudinal studies on selected groups of war-injured children, and to analyze all studies with respect to their implications for world citizenship and outline areas for further investigation. Examples of some of the suggested topics are: "Effects of Displacement and Disruption," such as emotional effects of prolonged hunger, effects of camp life on families, effects on families of civilian war activities; "Special Studies of Impact of War on Children, Youth, and Families," as, for instance, seen by social agencies and in psychiatric consultation; and "Critical Evaluation of Current Methods of Handling Children."

The program of the Conference will be made up of reports of "Preparatory Commissions" now being organized in various countries. Any interested and qualified person or groups of persons can form a Commission. Although some of the Commissions will contain representatives of only a single profession, a multi-discipline approach is being encouraged. In the United States, Regional Chairmen, and under them Area Coordinators, are being appointed to direct and consolidate the work of the Commissions.

Psychologists interested in forming Preparatory Commissions should begin immediately to organize their groups, choose their topics for discussion, and prepare their reports. In order to obtain official status they should submit the names and addresses of the members of their groups and the name and address of the chairman, as well as a brief one-page summary of their projected report, to the executive office of the Committee at the address given below.

Preliminary plans for the United States participation in the Conference and detailed instructions for forming Preparatory Commissions are given in a Bulletin issued by the Committee. Copies may be obtained from Nina Ridenour, Executive Officer, International Committee for Mental Hygiene, 1790 Broadway, New York 19, N. Y. Copies of the revised program of the Congress, including registration blanks and all necessary information, may also be obtained from Dr. Ridenour.

Lt. Col. CHARLES S. GERSONI, Medical Service Corps, Regular Army, has been assigned to duty as Chief, Clinical Psychology Branch, Neuropsychiatry Consultants Division, Surgeon General's Office, Washington, D. C. Major JEROME G. SACKS, Medical Service Corps, Regular Army, has been transferred to the Medical Field Service School, Brooke

Army Medical Center, Ft. Sam Houston, Texas. He will be associated with the Department of Neuropsychiatry in the instruction of clinical psychology.

ARNOLD H. HILDEN has been appointed Assistant Branch Chief Clinical Psychologist, Branch Office No. 9, Veterans Administration, St. Louis, Missouri. Dr. Hilden has been associate professor of psychological growth, Child Research Council, Colorado University School of Medicine.

GRACE COX, formerly psychologist with the Tri-County Child Guidance Center in Harrisburg, has joined the staff of the Bureau of Mental Health, Pennsylvania Department of Welfare, as field representative-psychologist.

H. N. PRONKO and J. W. BOWLES, JR. have been appointed research associates at the Wichita Guidance Center. Both are also on the faculty at the University of Wichita. ALICE HYDE SOURS has been appointed psychological examiner on the staff of the Center; MAX APFELDORF has been appointed junior extern; DOROTHY E. TAMBLYN has been appointed case work consultant.

FREDERICK B. DAVIS, formerly assistant director of the AAF Aviation Psychology Program, has accepted an appointment as professor and head of the department of psychology at the George Peabody College for Teachers. He will also be in charge of the Child-Study Clinic.

CLARK L. HULL and CARL HOVLAND have been made Sterling Professors of Psychology at Yale University, it has been announced by President Charles Seymour. They are the first psychologists to be appointed to these chairs.

GLADYS E. GILLMAN has been awarded the Psychology Prize established by John A. Slade at Skidmore College, Saratoga Springs, New York.

ARTHUR KORNHAUSER has been appointed professor of psychology at Wayne University beginning February, 19 8. The assignment is to do part-time teaching in industrial psychology and to conduct research on psychological aspects of labor relations. Dr. Kornhauser has been with the Bureau of Applied Research at Columbia University.

SIEGEN K. CHOU, chairman of the department of psychology, National Tsing Hua University, Peiping, China, is spending a sabbatical year in this country. He is investigating recent developments in American psychology. He wishes to make contact with anyone interested in the rehabilitation of Chinese psychology. The Tsing Hua department of psychology needs books, journals, reprints, and apparatus. If possible contributors will send a list of available materials to Dr. Chou, he will arrange to have the Tsing Hua department pay shipping costs. Dr. Chou's temporary address is: c/o Department of Psychology, Stanford University, California. After January he will be visiting professor in the Laboratory of Physiological Psychology at Yale University.

WILLIAM A. OWENS has been made professor and chairman of the department of psychology at Iowa State College.

CARROLL H. LEEDS, formerly head of the psychology department, Mississippi State College for Women, has been appointed professor and head of the department of psychology at Furman University, Greenville, South Carolina.

EDWARD W. RICE, chief of psychological testing at Merck & Co., Rahway, New Jersey, has been appointed to a part-time position as adviser to pre-engineering students and psychological testing consultant at Union Junior College, Cranford, New Jersey.

JAMES C. COLEMAN, assistant professor, MORTON J. KESTON, assistant professor, and DAVID T. BENEDETTI, instructor, have joined the staff of the department of psychology at the University of New Mexico.

ROBERT J. BALL has been appointed to serve on a Commission on Juvenile Justice in California. This commission is one of five to be appointed by the governor to investigate all phases of crime.

GEORGE KATONA has been appointed associate professor of psychology at the University of Michigan. He is directing the Federal Reserve Study for the Survey Research Center.

WALLY REICHENBERG-HACKETT, formerly consulting psychologist at Riverdale Country School, New York City, has accepted a position as assistant professor of psychology at Duke University, Durham, North Carolina.

H. M. JOHNSON has been appointed to the first research professorship recently established at Tulane University in memory of Dr. John Madison Fletcher. CECIL W. MANN has succeeded Dr. Johnson as chairman of the department of psychology. New members of the psychology department staff are FRED Y. BILLINGSLEA, associate professor, PHILIP WORCHEL and DOROTHY SIMRALL, assistant professors, and IRVING I. FOSBERG, assistant professor and director of the bureau of psychological services.

The Hamilton Station and the Division of Behavior Studies of the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, escaped damage in the fire on Mt. Desert Island. The entire library of the laboratory for cancer research was destroyed. The collection of psychological reprints and a set of psychological abstracts were saved, but the laboratory is badly in need of standard reference books and journals dealing with animal psychology.

GEORGE A. KELLY, VICTOR RAIMY, and WILDA ROSEBROOK have been appointed as an advisory panel to the Division of Mental Hygiene of the Ohio State Department of Public Welfare. They will recommend clinical psychologists for employment in the hospitals and clinics of the state. Several positions are now open, including two in the clinic being established in connection with the Miami Valley Research Project described in *Time*, March 31, 1947. Beginning salaries range from $3550 to $4023 a year with a 2 per cent increase for five years. Applicants should write to Dr. George A. Kelly, Psychological Clinic, Ohio State University, Columbus 10, Ohio.

The Children's Hospital-School, Chicago, announces the availability of an externship in clinical psychology. The position will offer opportunity for training and research in work with severely handicapped, educable children. Individual and group psychotherapy forms an important part of the program. There are excellent research possibilities in this area as well as in problems centering about perception and brain damage. Preference will be given to graduate students with clinical skill and experience who are working for an advanced degree. Salary is dependent upon the number of hours per week that the extern is able to give. For information write to Ann Heilman, Illinois Children's Hospital-School, 2551 North Clark Street, Chicago 14, Illinois.

The California Personnel Board has announced an examination to be held January 13, 1948 for the position of Senior Clinical Psychologist. The closing date for mailing applications is December 23, 1947. Candidates should have had education to the level of the master's degree and two years of full-time paid experience in the practice of clinical psychology, involving the examination, classification, diagnosis, and treatment of individuals of various age levels. Possession of the doctor's degree in psychology may be substituted for one year of experience. Entrance salary is $376 a month with annual increases for satisfactory service to $458 a month at the end of four years. State residence requirement is waived, and the written examination will be given in various parts of the country. Applications may be obtained from the California State Personnel Board, 1015 L Street, Sacramento, California.

The Connecticut State Hospital has announced a vacancy for a staff psychologist in its psychology department. Requirements for the position are a master's degree and one year of experience. The staff psychologist will work under the director of the psychological laboratories and will be responsible for clinical testing of patients, group therapy, supervision of interns in training, and for active participation in research. Salary is $3000 a year, with $316 deducted for maintenance if maintenance is desired. For further information write to Dr. Edgar C. Yerbury, Superintendent, Connecticut State Hospital, Middletown, Connecticut.

INDEX TO VOLUME II

APA Officers, Division Officers, Editors, Committees and Representatives, 1947–48, 511

Across the Secretary's Desk, 24, 76, 108, 151, 180, 213, 247, 388, 449, 529, 561

American Psychological Association, Inc., Detroit, Michigan, Proceedings of the Fifty-Fifth Annual Business Meeting of the, HELEN PEAK, 468

Analysis of Action on Science Legislation in the Last Congress, An., ROBERT W. LEEPER, 127

ANASTASI, ANNE, The Place of Experimental Psychology in the Undergraduate Curriculum, 57

Annual Report of the Executive Secretary: 1947, DAEL WOLFLE, 516

Annual Report of the Policy and Planning Board of the American Psychological Association: 1947, 191

Are Rat Psychologists Responsible for Fission? C. W. CRANNELL, 22

ARMSTRONG, CLAIRETTE, On Defining Psychology as a Profession, 446

BAKER, GERTRUDE and JOHN GRAY PEATMAN, Tests Used in Veterans Administration Advisement Units, 99

BARNETTE, W. LESLIE, JR., Psychological Boners, 369

BARTLETT, F. C. Visitor to America, 372

BAYTON, JAMES A. Opportunities for Negroes in Psychology, 207

BECK, LESTER F., Proceedings of the Twenty-Seventh Annual Meeting of the Western Psychological Association, 404

BERRIEN, F. K., A New Type of Elementary Course, 148

Bibliography on Careers in Psychology, A, GEORGE J. DUDYCHA, 376

BICE, RAYMOND C., More Effective Use of Machine Scored Examinations, 179

BIRD, CHARLES, WILLIAM T. HERON, PAUL E. MEEHL, DONALD G. PATERSON, The Foreign Language Requirement for the Ph. D., 136

BLACK, JOHN D., Must We Frighten Our Students?, 527

Board of Directors, picture, 181

BORING, EDWIN G., Psychologists Opinions vs Their Sense of Evidence, 178

BORING, EDWIN G. with ALICE I. BRYAN, Women in American Psychology; Factors Affecting Their Professional Careers, 3

BRYAN, ALICE I. and EDWIN G. BORING, Women in American Psychology; Factors Affecting Their Professional Careers, 3

BUXTON, CLAUDE E., Proceedings of the Nineteenth Annual Meeting of the Midwestern Psychological Association, 419

Calibration of Test Items, The, L. L. THURSTONE, 103

Call for Papers, Fifty-Fifth Annual Meeting of the American Psychological Association, THE CONVENTION PROGRAM COMMITTEE, 120

CARL R. ROGERS, portrait, 357

CARTER, GERALD, Practice in Personnel Psychology, 148

CHASE, WILTON P., Professional Frustration in Government Psychologists, 73

Clinical Method in Science, The, FREDERICK C. THORNE, 159

Clinical Training Facilities: 1947, ROBERT R. SEARS, 199

COFER, CHARLES N. and GEORGE HORSLEY SMITH, A Simple, Inexpensive Classroom Demonstration of Concept Formation, 521

COMMITTEE on TRAINING IN CLINICAL PSYCHOLOGY, Recommended Graduate Training Program in Clinical Psychology, 539

Comparison of ASTP Psychology Graduates with Other Groups in the AAF Classification School, A, ARTHUR O. ENGLAND AND HARRY LAURENT, JR., 63

Conference on Genetics and Social Behavior at the Roscoe B. Jackson Memorial Laboratory, The, J. P. SCOTT, 176

Convention Calendar, 32, 77, 116, 156, 220

CONVENTION PROGRAM COMMITTEE, THE, Call for Papers, Fifty-Fifth Annual Meeting of the American Psychological Association, 120

Counterpoint to a "Footnote to Military Psychology," IRVING C. WHITTEMORE, 208

CRANNELL, C. W., Are Rat Psychologists Responsible for Fission?, 22

DE MARTINO, MANFRED FRANK with THEODORE LANDSMAN, Some Areas of Caution for the Psychology Student, 145

DUDYCHA, GEORGE J., A Bibliography on Careers in Psychology, 376

Eastern Psychological Association, Proceedings of the Eighteenth Annual Meeting of the, J. McV. HUNT, 429

ENGLAND, ARTHUR O. and HARRY LAURENT, JR., A Comparison of ASTP Psychology Graduates with Other Groups in the AAF Classification School, 63

Executive Secretary, Annual Report of the, DAEL WOLFLE, 515

FERNBERGER, SAMUEL W., The Future of Psychology, or the Goose that Laid the Golden Eggs, 209

Fifty-Fifth Annual Meeting of the American Psychological Association, 119

FISKE, DONALD W., Must Psychologists be Experimental Isolationists?, 23; Naval Aviation Psychology. IV. The Central Research Groups, 67

FITTS, PAUL M., Psychological Research on Equipment in the AAF, 93

FLANAGAN, JOHN C., Research Reports of the AAF Aviation Psychology Program, 375

Footnote to Military Psychology, ROBERT TYSON, 21

Foreign Language Requirement for the Ph.D., The, CHARLES BIRD, WILLIAM T. HERON, PAUL E. MEEHL, DONALD G. PATERSON, 136

Formation of a Committee for the Study of Animal Societies Under Natural Conditions, J. P. SCOTT, 212
Further Comment, S. S. STEVENS and GERALDINE STONE, 524
Future of Psychology, or the Goose that Laid the Golden Eggs, The, SAMUEL W. FERNBERGER, 209
Future of Research in Clinical Psychology and Psychiatry, The, DAVID RAPAPORT, 167

HERON, WILLIAM T., with CHARLES BIRD, PAUL E. MEEHL, DONALD G. PATERSON, The Foreign Language Requirement for the Ph.D., 136
History of Psychological Studies of the Design and Operation of Equipment, WILLIAM E. KAPPAUF, 83
HUNT, J. MCV., Proceedings of the Eighteenth Annual Meeting of the Eastern Psychological Association, 429
HUTT, MAX L. and EMMETTE O. MILTON, An Analysis of Duties Performed by Clinical Psychologists in the Army, 52

In Defense of Military Psychology, HARRY J. OLDER, 105
Industrial Psychology as Management Technique and as Social Science, ARTHUR KORNHAUSER, 224

KAPPAUF, WILLIAM E., History of Psychological Studies of the Design and Operation of Equipment, 83
KORNHAUSER, ARTHUR, Industrial Psychology as Management Technique and as Social Science, 224

Laboratory Period in the First Course in Psychology, A, HAROLD SCHLOSBERG, 384
LANDSMAN, THEODORE and MANFRED FRANK DE MARTINO, Some Areas of Caution for the Psychology Student, 145
LAURENT, HARRY, JR. with ARTHUR O. ENGLAND, A Comparison of ASTP Psychology Graduates with Other Groups in the AAF Classification School, 63
LEEPER, ROBERT W., Analysis of Action on Science Legislation in the Last Congress, An, 127
LEY, ENID S., Personnel Placement Activities of the APA, 213

MEEHL, PAUL E., with CHARLES BIRD, WILLIAM T. HERON, DONALD G. PATERSON, The Foreign Language Requirement for the Ph.D., 136
MENNINGER, KARL, Psychology and Psychiatry, 139
Midwestern Psychological Association, Proceedings of the Nineteenth Annual Meeting of the, CLAUDE E. BUXTON, 419
MILTON, EMMETTE O., with MAX L. HUTT, An Analysis of Duties Performed by Clinical Psychologists in the Army, 52
More Effective Use of Machine Scored Examinations, RAYMOND C. BICE, 179
MRS. J. P. SYMONDS, portrait, 562
Multiple Cubicle-bench for the Student Laboratory in Psychology, A, CARL PFAFFMANN, 559
Must Psychologists be Experimental Isolationists? DONALD W. FISKE, 23
Must We Frighten our Students? JOHN D. BLACK, 527

Naval Aviation Psychology. IV. The Central Research Groups, DONALD W. FISKE, 67
New Type of Elementary Course, A, F. K. BERRIEN, 148
Notehand for Psychologists, W. S. TAYLOR, 106

OLDER, HARRY J., In Defense of Military Psychology, 105
On Defining Psychology as a Profession, CLAIRETTE P. ARMSTRONG, 446
Opportunities for Negroes in Psychology, JAMES A. BAYTON, 207

PATERSON, DONALD with CHARLES BIRD, WILLIAM T. HERON, PAUL E. MEEHL, The Foreign Language Requirement for the Ph.D., 136
Pavlov Letter, 210
PEAK, HELEN, Proceedings of the Fifty-Fifth Annual Business Meeting of the American Psychological Association, Inc., Detroit, Michigan, 468
PEATMAN, JOHN GRAY with GERTRUDE BAKER, Tests Used in Veterans Administration Advisement Units, 99
Personnel Placement Activities of the APA, ENID S. LEY, 213
PERSONNEL RESEARCH AND PROCEDURES BRANCH, ADJUTANT GENERAL'S OFFICE, Validation of the General Clerical Abilities Test for Selection and Placement of War Department Civilian Personnel, 141
PFAFFMANN, CARL, A Multiple Cubicle-bench for the Student Laboratory in Psychology, 559
Picture of the Committee on Graduate and Professional Training, 206
Place of Experimental Psychology in the Undergraduate Curriculum, The, ANNE ANASTASI, 57
Policy and Planning Board of the American Psychological Association, 1947, Annual Report of the, 191
Practice in Personnel Psychology, GERALD CARTER, 148
Problem of Psychotherapy, The, LAURANCE F. SHAFFER, 459
Proceedings of the Eighteenth Annual Meeting of the Eastern Psychological Association, J. McV. HUNT, 429
Proceedings of the Nineteenth Annual Meeting of the Midwestern Psychological Association, CLAUDE E. BUXTON, 419
Proceedings of the Thirty-Ninth Annual Meeting of the Southern Society for Philosophy and Psychology, JOSEPH WEITZ, 397
Proceedings of the Twenty-Seventh Annual Meeting of the Western Psychological Association, LESTER F. BECK, 404
Professional Frustration in Government Psychologists, WILTON P. CHASE, 73
Professor Taylor and the Problem of Notehand, F. L. WELLS, 524
Program of the Fifty-Fifth Annual Meeting of the American Psychological Association, 255
Proposal for a Code of Ethics for Professional Psychologists, A, 246
Psychological Boners, W. LESLIE BARNETTE, 369
Psychological Notes and News, 29, 77, 110, 152, 183, 216, 248, 389, 451, 531, 563
Psychological Research on Equipment Design in the AAF, PAUL M. FITTS, 93

Psychological Writing, Easy and Hard, S. S. STEVENS AND GERALDINE STONE, 230
Psychologists' Finances, HELEN WOLFLE, 236
Psychologists Opinions vs. Their Sense of Evidence, EDWIN G. BORING, 178
Psychology and Psychiatry, KARL MENNINGER, 139
Psychology at the Naval Research Laboratory, FRANKLIN V. TAYLOR, 87

RAPAPORT, DAVID, The Future of Research in Clinical Psychology and Psychiatry, 167
Recommendations to the National Commission for UNESCO, 244
Recommended Graduate Training in Clinical Psychology, COMMITTEE ON TRAINING IN CLINICAL PSYCHOLOGY, 539
Reply to "Professional Frustration in Government Psychologists," FRANKLIN V. TAYLOR, 178
Report of the Committee on Training in Clinical Psychology, Recommended Graduate Training in Clinical Psychology, 539
Research on Personnel Selection in the Royal Navy and the British Army, P. E. VERNON, 35
Research Reports of the AAF Aviation Psychology Program, JOHN C. FLANAGAN, 375
ROGERS, CARL R., portrait, 357
ROGERS, CARL R., Some Observations on the Organization of Personality, 358
ROSENZWEIG, SAUL, The Flesch and the Spirit, 523

SCHLOSBERG, HAROLD, A Laboratory Period in the First Course in Psychology, 384
SCOTT, J. P., Formation of a Committee for the Study of Animal Societies Under Natural Conditions, 212
SEARS, ROBERT R., Clinical Training Facilities: 1947, 199
Sensible Organization of Courses in Psychology, The, DAEL WOLFLE, 437
SHAFFER, LAURANCE F., The Problem of Psychotherapy, 459
Simple, Inexpensive Classroom Demonstration of Concept Formation, A, CHARLES N. COFER AND GEORGE HORSLEY SMITH, 521
SMITH, GEORGE HORSLEY with CHARLES N. COFER, A Simple, Inexpensive Classroom Demonstration of Concept Formation, 521
Society of Experimental Psychologists, picture, 223
Some Areas of Caution for the Psychology Student, THEODORE LANDSMAN AND MANFRED FRANK DE MARTINO, 145
Some Observations on the Organization of Personality, CARL R. ROGERS, 358
Southern Society for Philosophy and Psychology, Proceedings of the Thirty-Ninth Annual Meeting of the, JOSEPH WEITZ, 397
STEVENS, S. S. and GERALDINE STONE, Psychological Writing, Easy and Hard, 230; Further Comment, 524
STONE, GERALDINE with S. S. STEVENS, Psychological Writing, Easy and Hard, 230; Further Comment, 524
SYMONDS, MRS. J. P., portrait, 562

TAYLOR, FRANKLIN V., Psychology at the Naval Research Laboratory, 87; Reply to "Professional Frustration in Government," 178
TAYLOR, W. S., Notehand for Psychologists, 106
Tests Used in Veterans Administration Advisement Units, GERTRUDE BAKER and JOHN GRAY PEATMAN, 99
The Flesch and the Spirit, SAUL ROSENZWEIG, 523
THORNE, FREDERICK C., The Clinical Method in Science, 159
THURSTONE, L. L., The Calibration of Test Items, 103
Training of Clinical Psychologists, The, CHARLES ULLMAN, 173
Twelfth International Congress of Psychology, 211
TYSON, ROBERT, Footnote to Military Psychology, 21

ULLMAN, CHARLES, The Training of Clinical Psychologists, 173

Validation of the General Clerical Abilities Test for Selection and Placement of War Department Civilian Personnel Staff, PERSONNEL RESEARCH SECTION, PERSONNEL RESEARCH AND PROCEDURES BRANCH, ADJUTANT GENERAL'S OFFICE, 141
VERNON, P. E., Research on Personnel Selection in the Royal Navy and the British Army, 35
Visitor to America, F. C. BARTLETT, 372

WEITZ, JOSEPH, Proceedings of the Thirty-Ninth Annual Meeting of the Southern Society for Philosophy and Psychology, 397
WELLS, F. L., Professor Taylor and the Problem of Notehand, 525
Western Psychological Association, Proceedings of the Twenty-Seventh Annual Meeting of the, LESTER F. BECK, 404
WHITTEMORE, IRVING C., Counterpoint to a "Footnote to Military Psychology," 208
WOLFLE, DAEL, The Sensible Organization of Courses in Psychology, 437; Annual Report of the Executive Secretary, 516
WOLFLE, HELEN, Psychologists' Finances 236
Women in American Psychology: Factors Affecting their Professional Careers, ALICE I. BRYAN and EDWIN G. BORING, 3